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PART I. ORIGINAL COMMUNICATIONS.

ART. I.—*On Some Colour-Tests for the Chief Nitrogenous Constituents of Urine.*^a By WALTER G. SMITH, M.D.; Ex-President, R.C.P.I.; Physician to H. E. the Lord Lieutenant; Physician to Sir Patrick Dun's Hospital.

THE chief object of this communication is to demonstrate an interesting colour test for urea which has lately been discovered by Mr. Fenton, and, in connection with it, I propose also to show some of the older and better known colour tests for the other nitrogenous constituents of urine.

The nitrogenous bodies in urine which respond to colour tests are three in number.^b

1. Uric acid $C_5H_4N_4O_3$.

Uric acid contains 33.3 per cent. of nitrogen, and its average daily excretion is from 0.5 to 1 grm. Its origin is partly exogenous (food) and partly endogenous (tissue metabolism). Compared with urea, its amount in the urine is less influenced by the proteids of the food.

^a Read before the Section of Medicine in the Royal Academy of Medicine in Ireland on Friday, March 31, 1905.

^b Hippuric acid is excreted in appreciable amount, 0.1 to 1 grm. daily, but there is no test for it directly applicable to urine.

2 *The Chief Nitrogenous Constituents of Urine.*

The murexide test is so well known and so justly esteemed that it is unnecessary to dwell upon it.

Suffice it to say that the essential factor in its development is the presence of a body termed alloxantin ($C_8H_4N_4O_7$) which is formed along with alloxan, when nitric acid acts upon uric acid.

If a little alloxantin be smeared upon a piece of glass or cardboard, gently warmed, and held over a test-tube containing some liq. ammoniæ, the fine red colour of murexide (ammonium purpurate) is at once produced. [*Experiment shown.*]

But the murexide test requires a little time and care to carry out successfully, and involves evaporation to dryness before adding ammonia.

For uric acid in solution a simple and convenient test was indicated by Offer in 1894 (*Centralbl. f. Physiologie*, 1894, Bd. viii.) It consists in adding a few drops of the yellow solution of phospho-molybdic acid ($H_3PO_4.11MoO_3.12H_2O$) to the urine made strongly alkaline with liq. potassæ (vel sodæ). A rich Prussian blue is developed. [*Experiment shown.*]

Red gravel, or a fragment of a uratic calculus, or, of a gouty tophus, is likewise easily identified by dissolving in liq. potassæ, and adding the phospho-molybdic acid. The blue colour is the result of a reduction process. Neither urea, kreatinin, nor grape sugar affects it; but it reacts with levulose, albumin, and alkaloids.^a

2. Kreatinin, $C_4H_7N_3O$. contains 37.1 per cent. of nitrogen; daily excretion $\frac{1}{2}$ to 1 grm. It is chiefly exogenous in origin, derived from the kreatin of meat, but is, in part, endogenous, due to metabolism of muscular tissue. It is not known how much of the ingested kreatin is excreted unaltered, or as kreatinin, or as urea. The best mode of demonstrating it in urine is by Weyl's test.

Add a few drops of a weak, freshly prepared solution of sodium nitroprusside ($Na_2Fe(CN)_5(NO).2H_2O$) and then,

^a This test was accidentally re-discovered some time ago in the Chemical Laboratory, T.C.D., by a medical student, Mr. Henley, now in the I.M.S.

cautiously, a little liq. potassæ (v. sodæ). A red colour is produced. [*Experiment shown.*]

Acetone (C_3H_6O), which is sometimes present pathologically in considerable amount, reacts similarly with liq. potassæ.

If liq. ammoniæ be substituted for the liq. potassæ, acetone develops a rich purple colour; kreatinin a clear red.

3. Urea, CH_4N_2O . Contains 46 per cent. of nitrogen.

Its origin is mainly endogenous, and its daily excretion amounts to 30 to 40 gms.

Kossel and Dakin have recently made the striking discovery of an enzyme, termed arginase, which acts upon arginin, one of the simpler cleavage-products of proteids.

Arginase is found in the intestinal mucous membrane, but more especially in the liver, and it splits arginin almost quantitatively into urea and ornithin (*Zeitschr. f. physiol. Chem.*, Bd. XLI., 321).

Hitherto the usual mode of identifying urea was by microscopical examination of some of its crystalline salts, either the nitrate or oxalate. There was no satisfactory colour test for it.

In 1903, however, Mr. Henry Fenton (*Journ. Chem. Soc.*, Feb., 1903) discovered an interesting colour test, which I shall presently demonstrate.

The essential reagent is a compound termed methyl-furil ($C_{11}H_8O_4$), a derivative of furfural. This compound occurs in yellow, lustrous needles, and I am much indebted to Dr. Emerson Reynolds for a specimen of it.

The test will not answer directly with urine until it is evaporated to dryness or nearly so. If a fragment of urea or of the dried urine-residue be ground up with a trace of methyl-furil, and a few drops of strong HCl be added, a rich blue colour is developed. [*Experiment shown.*]

If the substance to be examined is in solution it may be mixed with an alcoholic solution of the reagent, and evaporated to dryness on the water-bath.

0.1 mgm. of urea yields a strongly-marked colour, and, with care, it is easy to detect 0.01 mgm., or even less.

Thio-urea gives a slight greenish colour. The blue colour is characteristic of urea (carbamide) and of mono-substituted carbamides (alkyl group). Acidyl-carbamides do not give the reaction.

With primary *amines* (*e.g.*, aniline), in acetic acid solution, the test produces a brilliant green, without the aid of a condensing agent—*e.g.*, HCl or POCl₃.

ART. II.—*Painless Hæmaturia.*^a By LEVESON-GOWER GUNN, M.D., F.R.C.S.I.; Assistant Surgeon, Adelaide Hospital, Dublin.

THE presence of blood in the urine has for a long time been considered as a cardinal symptom of disease of some portion of the genito-urinary system. It is the symptom which, with perhaps the exception of very acute pain, appeals most forcibly to the patient.

Pain, irritation, and frequency of micturition may be, and often are, suffered for months without seeking medical aid, but should the sufferer pass blood in his urine, and recognise it as such, he will, as a rule, lose no time in seeking advice for the relief of his complaint.

To the medical man, to whom such a case comes, hæmaturia as a symptom will arouse both interest and anxiety—anxiety as he knows only too well what severe and even fatal disease may first show itself by this symptom, and interest in so far as he realises that the diagnosis will, as a rule, call for the closest care and observation on his part—the road to correct diagnoses in genito-urinary disease being beset by many pitfalls.

In the majority of cases hæmaturia will be associated with pain, and although in the genito-urinary tract pain is often referred from the actual lesion as from one kidney to the other, or from the kidney to the bladder, or the bladder to the penis, still the presence of pain will, generally speaking, help in making the diagnosis as to the locality that is bleeding.

^a Read before the Section of Surgery in the Royal Academy of Medicine in Ireland on Friday, March 24, 1905.

In cases of painless hæmaturia this difficulty of diagnosis is greatly increased, while the necessity for an accurate diagnosis is in no way diminished, as the absence of pain does not mean an absence of danger to the patient.

In the first place we must find out whether the blood is coming from the urethra, the bladder, the ureter, the pelvis of the kidney, or the kidney itself, and if from the ureter or kidney, whether from the right or left side.

This problem once solved, then comes the more difficult one of the cause of the hæmorrhage.

Bleeding from the urethra can, as a rule, be diagnosticated by the fact that the blood may come at times unmixed with the urine; in lesions of the bladder, ureter, or kidney the blood will be intimately mixed with the urine. It is to the differential diagnosis of these cases I wish to call your attention, and to the extent that cystoscopy, kryoscopy, and segregation of the urine will help us in making this diagnosis in the treatment and in the prognosis of such cases.

Five cases of painless hæmaturia have passed through my hands since last August. All had this common symptom, but the cause of the bleeding differed widely in each case. I have been able to verify the diagnosis absolutely in three, almost certainly in the fourth, while in the fifth I have not yet been able to prove whether the provisional diagnosis is correct or not. This case I now lay before you.

CASE I.—In August, 1904, I was asked by Dr. Smyly to see Miss E. R., aged fifty-seven years, a patient in the Adelaide Hospital. Her history is as follows :—She has always been strong herself; her family are all healthy; there is no tubercular disease among any of her relations. Patient works in a factory. In June last, 1904, she noticed the urine rather red after a heavy day's work—this happened several times during June and July. She consulted a doctor, who told her she was passing blood, and advised her to go up to hospital. She is a thin, spare-looking woman, with good colour in her face, and looks, as she feels, quite healthy. On examining her abdomen both kidneys could be easily felt; both move freely on respiration; the left kidney,

which feels rather small, and is quite painless, can be readily held down between the examining hands ; no other abnormality. Urine 1024, clear, acid ; no albumen, blood, or pus. While she remained quietly in bed the urine remained normal. This she said was always the case, the blood only occurring if she had hard work to do, or much walking or standing. She was sent out for a brisk walk, and that evening the urine contained a little blood, but was clear again next morning. The blood was intimately mixed with the urine ; no blood casts could be found.

I decided to examine the interior of the bladder with a new cystoscope. This is Professor Nitze's latest design, which differs in many ways from the older forms of cystoscope, and possesses numerous improvements.

The size is only that of a No. 12 English catheter, and renders the passage of the instrument comparatively painless to the patient and easy to the surgeon.

The telescopic part has been enlarged, and gives a larger and brighter field of vision. It is always in focus, and does not require the constant adjustment of the older instruments.

The lamp is larger and brighter, using a current of 12 volts. It is specially packed round with asbestos, rendering it what is technically called a cold lamp. That is, it will burn in the air for some time without heating, and for a considerable time immersed in water without becoming dangerously hot.

By this lamp one of the greatest drawbacks to cystoscopy has been eliminated.

The speedy way the cable carrying the current can be attached, and as readily removed, greatly facilitates the ease with which it may be introduced into the bladder, and lastly, the entire surface of the instrument has been kept as smooth as possible, so that it can be efficiently cleaned and sterilised—a point of no small importance.

There are three conditions that must be present before a cystoscopic examination of the bladder can be satisfactorily carried out:—

1st. The urethra must allow the passage of a No. 12 catheter. This, I think, is obvious.

2nd. The bladder must be capable of containing at

least 4 ozs. of fluid. Less than this amount will not give sufficient room to manipulate the beak of the instrument, and will not allow a proper view of any part of the bladder—the wall of which may easily be injured in the attempt.

3rd. It must be possible to fill the bladder with a clear fluid. To obtain this in most cases is only a matter of patient washing out, but bleeding may be too free or the discharge of pus too continuous ever to allow a proper inspection.

To these I might add, perhaps, that the operator must possess a very thorough knowledge of the normal bladder as seen through the cystoscope—and this differs largely from its appearance in the *post-mortem* room—or the inspection of the bladder will not give him much information.

Cocaïn injected first into the urethra, and later on into the bladder, makes the operation almost painless, and renders a general anæsthetic very rarely necessary.

The patient's bladder held 10 ozs. of fluid, and I was able to examine it thoroughly, and satisfy myself that there was no abnormality there that could cause bleeding. The mouths of both ureters were normal, and clear urine issued from each. I examined the bladder again after she had taken some exercise, and found, as I expected, blood coming from one ureter; the urine on the right side came in a clear efflux, while that from the left ureter was clouded with blood. The appearance of the mouth of the ureter was against the presence of a stone in the ureter or in the pelvis of the kidney, and an X-ray photograph confirmed this, showing no signs of stone. The diagnosis lay between a tubercular deposit in the left kidney, a new growth in the pelvis or in the kidney itself, an angiomatous condition of one of the renal papillæ, or that the bleeding might be due to the mobility of the kidney. The absence of either fever, pus, or tubercle bacilli was against tubercular disease; the small size, smooth surface, and absence of pain was against a new growth in the kidney. I passed a carefully sterilised catheter (by means of this cystoscope) up the ureter into the pelvis of the kidney; this caused no bleeding, as it would almost certainly have done had there been a villous growth in either ureter or pelvis. I believe

that in this case the bleeding was due to enlarged blood vessels in the renal papillæ, which probably bleed only when the kidney drops after extra exertion, this misplacement probably causing some engorgement of the vessels. I suggested exposing, exploring, and, should there be no sign of a new growth present, fixing the kidney. The patient was unwilling to have any operation done unless I considered it absolutely necessary, and, under these circumstances, I sent her home with orders to report herself every six months. I saw her again in February, 1905. Her condition is unchanged, and her general health is excellent.

In a case of this kind one must always remember the possibility of malignant disease of the kidney starting in this way, and I have given a guarded prognosis in this case, and will urge that the kidney be at once examined if it shows the least sign of enlarging.

CASE II.—Mr. H., aged fifty-one years, a commercial traveller. I was asked to see this patient in September, 1904, by Dr. Bewley. His family history is good ; he has had no illness of any importance prior to April, 1904, when his present trouble began. He was staying in London at the time, and was greatly startled one morning to find a quantity of blood passing in his water. He sent at once for a doctor, who kept him in bed for a couple of days. The bleeding stopped in 24 hours, and he felt none the worse. At intervals of from two to six weeks these attacks recurred, sometimes preceded for a few hours by a feeling of malaise, but as a rule coming on without any warning. In August the bleeding was very severe, lasting for nine days, and leaving the patient very weak. Another attack occurred in September, when I was asked to see him. Patient is exceedingly pale, and has evidently lost a great deal of blood. He feels weak, but has not lost weight ; urine sp. gr. 1012 ; acid ; contains a quantity of blood ; no pus ; some flat epithelium. He has no pain anywhere, and nothing abnormal can be felt. He says he has been a rather heavy spirit drinker for some years.

I washed out the bladder and examined it with the cystoscope ; it appeared quite normal. The mouths of both ureters were normal, and clear urine was coming from the right ; from the left ureter clots of blood, moulded to the shape of the ureter, were being forced out with gushes of blood-stained urine. These ureteral blood-casts were lying coiled up in the lowest part of

the bladder. X-ray photograph showed, as I expected, no stone. With rest in bed, and large doses of chloride of calcium, the hæmaturia stopped in a few days. The urine then showed sp. gr. 1012; acid; trace of albumen; a few granular tube-casts.

I believed the trouble in this case was either a new growth in the kidney or one of these rather rare cases of interstitial nephritis which may bleed freely. It was obvious that active measures must be taken to prevent another hæmorrhage, as the patient was now so weak that it seemed probable that a further bleeding might prove fatal. As it is a matter of great importance to know the functional soundness of the patient's other kidney, I separated his urine with Professor Luy's segregator, which fits into the floor of the bladder, dividing it into two compartments by this rubber septum, and through these lateral openings collects in these glass tubes the urine as it flows from either ureter.

The urine so obtained from the right kidney I examined by kryoscopy, the principal of which is briefly as follows:—

The kidneys, by their osmotic power, separate from the blood the salts dissolved in the urine. Should this power be impaired this separation will not take place, but as the molecules continue forming in the body and passing into the blood it follows that the total amount in the blood will be increased, and in the urine will be diminished.

The molecular concentration in the blood will be too great, and that in the urine too low.

The greater the molecular concentration in the urine separated by the kidney the lower the temperature required to freeze the fluid will be.

By kryoscopy we can measure the concentration of the blood and of the urine in a rapid and fairly accurate manner, and by comparing the two results gain much information as to the functional activity of the kidney.

The apparatus I use is Bergmann's. It consists of a delicate thermometer graduated to 1-100ths of a degree Centigrade running from 0 to - 5 degrees. This thermometer passes through a rubber cork into about 15 c.c. of

the mixture to be frozen. This is surrounded by a freezing mixture of ice and salt.

The fluid is kept well mixed by means of a platinum mixer until it freezes solid right through. The height at which the mercury stands is read off, the fluid is allowed to thaw, and the experiment is repeated again.

Blood normally freezes at -0.56° ; an increase of this freezing depression point to -0.58° or lower shows renal insufficiency.

The depression freezing point of the urine is not nearly so constant as that of the blood, and varies in health from -1.2° to -2.2° . If it should rise to 1 deg. below zero or higher than this, it shows that both kidneys are diseased. For as long as either kidney has a sufficient amount of healthy parenchyma left to separate these substances from the blood, there will be no alteration from the normal freezing point of either blood or urine.

It is possible then by this method to estimate the functional capacity of both kidneys, and by the use of the segregator or the ureteral catheter to estimate separately the powers of each. It is claimed that this alteration in the freezing point is present in cases of renal mischief long before any general symptoms of kidney insufficiency occur.

There are two conditions which may cause the urine to freeze at a higher point than normal, but are still compatible with a healthy renal epithelium:—

1st. If there has been a very large intake of water.

2nd. If a profound anæmia is present.

There are four conditions also which may cause the blood to freeze at too low a point without kidney insufficiency being present:—

1st. Increased abdominal pressure, especially when such an increase is due to the presence of any large abdominal tumour.

2nd. If the blood is not receiving a proper supply of oxygen from the lungs.

3rd. If the patient's diet does not contain a good supply of carbohydrates.

4th. One-sided renal pain, due to a stone or tumour, may cause a temporary insufficiency in the other kidney.

Some of these conditions can be easily rectified, the intake of water can be regulated for some time before the examination is made. If there is any doubt about the blood receiving enough oxygen from the lungs it is not a difficult matter to allow a little oxygen to pass through the test tube before it is frozen. A liberal carbohydrate diet can be arranged for, and, as a rule, it will be possible to choose a time during which the patient is free from pain to make the necessary examination.

The two remaining conditions—that of profound anæmia and increased abdominal pressure resulting from a tumour—cannot probably be got rid of, and in these cases abnormal kryoscopic readings must be accepted as of doubtful value.

In no case can a single estimation of the urine alone be taken as of much value, but if done in conjunction with the blood, and especially if abnormal readings are obtained on several occasions, its significance is then of the greatest importance.

In this case, although a severe anæmia was present, the freezing point of the blood, and of the urine from the right kidney, was normal, showing that there was no insufficiency of this side. In September, 1904, I removed the left kidney with some difficulty, as it had almost no pedicle, Mr. Gordon kindly assisting me. The kidney showed marked interstitial fibrosis, with numerous small hæmorrhages scattered through its substance. Sixteen ounces of urine passed the first day, and this amount has steadily increased until now the patient passes daily from forty to fifty ounces of urine; it is free from albumen, and there has been no bleeding since the operation, nor any sign of renal insufficiency.

CASE III.—Mrs. M. C., aged 47 years, a professional nurse. I was asked by Dr. Purefoy to see this patient in October, 1904. About a month before this date the patient noticed her urine dark in colour on several occasions — always, if from any cause, she had been unable to empty her bladder for some time. She has had some frequency of micturition during the day, and has been obliged to get up and empty her bladder

at least once during the night. This has been going on for over a year. Dr. Purefoy, to whom she showed the urine, told her that she was passing blood in it, and sent her on to me. She is a stout, healthy-looking woman, says she has never had any illness, and feels well at the present time. She has no pain, the frequency of micturition does not seem to trouble her, but she is nervous about the hæmaturia; urine sp. gr. 1022; alkaline; a few pus cells; some diplococci, and a few short thick bacilli; no blood.

I washed out the bladder, which held only six ounces with comfort, and examined with a cystoscope. The whole surface of the bladder was slightly reddened, vessels were enlarged, and here and there small tags of lymph were hanging from it; it presented the appearance of a chronic cystitis. The mouths of both ureters appeared slightly reddened, but were otherwise normal; clear urine came from each. Scattered over the trigone round the sphincter and the mouth of the left ureter are a number of small raised ulcers, some in process of healing, others breaking down. On injecting a little more fluid into the bladder, and so stretching the floors of these ulcers, several of them began to bleed, and so explained the cause of the hæmaturia. The ulcers were all superficial, and were, I believe, due to a secondary tubercular infection from one or other kidney. Primary tuberculosis nearly always occurs as a single large ulcer or as scattered sub-mucous patches. Secondary tuberculosis, on the other hand, often occurs as multiple small ulcers, sometimes grouped round the mouth of the ureter, through which the infection has come, the mouth of the ureter itself being often ulcerated. Neither ureter was ulcerated in this case, but from the grouping of the lesions I would suspect the left kidney to be the one at fault. I examined the urine several times, but could not find tubercle bacilli. I have since learned from her doctor that two of her children are tubercular, and that she herself had a smart attack of hæmoptysis just three years ago, so I have little doubt but that the diagnosis of secondary tuberculosis is correct. The ulcers have improved considerably under treatment, and there is no sign of fresh infection having taken place.

CASE IV.—Mr. M., aged forty-seven years, a retired civil servant. I was asked in November, 1904, to see this gentleman in consultation. He gave the following history:—He has always been rather delicate, and has lived a good deal abroad. In the

beginning of 1904 he first passed some blood in his urine; he had some frequency, but no pain. His doctor sounded him twice for stone, but with a negative result. These attacks of hæmaturia continued up to the time I saw him in November. They occurred at varying intervals, causing no pain, and giving no clue to the locality that was bleeding. The bleeding often lasts only a few hours, and never for more than a couple of days. The intervals during which the urine has been free from blood have varied from a few days to six or seven weeks.

Patient is a spare man, with a rather sallow complexion, but does not look anæmic. He feels weak, and thinks he has lost some flesh during the past year. On examining the abdomen one could see a marked fulness in the left hypochondriac region, and could feel with ease the edge of the spleen projecting a hand's breadth below the ribs. This enlargement seemed to extend back into the flank and mask the kidney. We felt sure that the spleen was much enlarged, but were not at all sure of feeling the left kidney at all.

I washed out his bladder and examined it carefully. Unfortunately, about an hour or two before I arrived the bleeding had stopped, and the urine was now quite clear. The bladder walls were quite healthy. A small pedunculated adenoma grew from the back of the middle lobe of the prostate; its surface was unbroken, and it could not be causing the bleeding. The mouths of both ureters appeared normal, and I saw clear urine flow from each.

This examination proved that the hæmorrhage was not vesical. We suspected that the left kidney was at fault—either that there was a growth in the kidney itself or that its circulation was interfered with by the pressure of the enlarged spleen. We decided to do nothing until the next hæmorrhage occurred, when I hoped to be able to ascertain definitely from which side the bleeding was coming. Urine was pale; sp. gr. 1018; acid; contained a trace of albumen; a few white cells, and a good deal of flat epithelium. Three weeks later bleeding recurred. The patient was now complaining of a sense of fulness in his left side and a constant desire to pass water. The swelling in the left side seems to have increased considerably in size. I passed a segregator into the bladder; there was an abundant flow of urine from the right ureter, while from the left only a

few drops of blood-stained urine came. It was decided to explore the left kidney at once. Next day I assisted at an operation on his left kidney; we found it enlarged to fully three times its normal size, and obviously the seat of a new growth. The kidney was removed, and the growth proved to be an adenoma invading the body and pelvis of the kidney. It is interesting to note that the spleen was not appreciably enlarged, and had evidently been pushed forward by the renal growth.

CASE V.—Mr. H., aged sixty-four years, a retired government official. He was sent to me by Dr. Wallace Beatty, in January, 1905, and gave me the following history:—He has always been a strong healthy man. Some two years ago he began to have some frequency and increasing difficulty in passing his water—in fact the usual train of symptoms that follow a senile enlargement of the prostate. Two months before I saw him he had a smart attack of hæmaturia, lasting for three days; he had no pain, and could assign no cause for its onset. A second rather less severe hæmorrhage had just ceased when he consulted me. On rectal examination the prostate could be felt generally enlarged, the right lobe feels very hard; the seminal vesicles were hard and larger than normal. Urine, 1024; acid; trace of albumen; a few white cells, and some cocci; no tubercle bacilli. I examined with a prostatic cystoscope, and found the bladder walls were healthy; the enlarged prostate could be well seen standing up into the bladder. From the back of the middle lobe sprang a red nodular growth, slightly pedunculated, covering the left ureteral orifice, and invading the bladder wall. I believed this growth to be a carcinoma.

Sir Charles Ball saw this case with me and agreed with this diagnosis, and with his assistance I removed the growth, a portion of the bladder wall, the enlarged prostate, and seminal vesicles through a supra-pubic incision. Microscopic examination of the part removed confirmed the diagnosis. The case has done well, and he is now only troubled with some loss of control if he tries to hold his water for more than two or three hours at a time, and this, I hope, will improve.

This paper has, I fear, already been over long, and I cannot now venture to discuss all the causes of painless hæmaturia. My object in bringing these cases before your notice at present is to try and demon-

strate that these methods of cystoscopy, kryoscopy, and segregation, although by no means infallible, yet will materially aid in forming a correct diagnosis in this difficult class of urinary cases.

ART. III.—*Some Miscellaneous Clinical Experiences.*^a

By R. TRAVERS SMITH, M.D., F.R.C.P.I.; Visiting Physician to the Richmond, Whitworth, and Hardwicke Hospitals.

CASE I.—T. J., a widow, aged thirty-eight, of intemperate habits, was admitted to the Whitworth Hospital in October, 1903, where she remained under my care till her death in November, 1904. She complained on admission of swelling of her feet and abdomen, and of pain in her right hypocondrium. She had previously been subject to bronchitis. She had had four children, one still-born, the other three died in early infancy.

Patient was well nourished, but rather pale. Conjunctivæ of a yellowish brown hue. The abdomen was distinctly enlarged, the lateral superficial veins evident; it was very easily palpated, as the muscles were weak and the recti were far apart. The liver was found to be uniformly enlarged, extending down to the umbilicus, abnormally tough in consistence, the anterior edge feeling very sharp. The spleen felt double the normal size at least, its rounded border contrasting markedly with the sharp edge of the liver with which it was in contact. The intestines were flatulent. There was no ascites present. The urine was normal, and contained no bile pigments. A blood examination showed moderate anæmia, but no other abnormality. The lungs were slightly emphysematous. The apex of the heart was displaced a little outwards. Over all the precordial region a systolic murmur could be heard, its point of maximum intensity obviously being the second left intercostal space, half an inch from the edge of the sternum. This murmur was not affected by respiration; it became slightly more distinct on exertion. The murmur could be traced only a short distance from the apex into the axilla. This murmur retained these characters till death. The feet were slightly œdematous. The diagnosis entertained were:—

(a) Passive congestion of liver and spleen, the result of failing

^a Read before the Section of Medicine in the Royal Academy of Medicine in Ireland on Friday, March 31, 1905.

right ventricle. This was excluded by the absence of any considerable enlargement of the heart, a normal pulse, and absence of other signs of passive venous congestion.

- (b) Spleno-medullary leukæmia or Hodgkins' disease, excluded by the blood examination and the absence of enlarged glands.
- (c) Biliary cirrhosis excluded by the absence of jaundice or of its history.
- (d) Malignant disease excluded by the regularity of the enlarged liver and spleen, and the want of any evidence of a primary form. The diagnosis finally arrived at was "hypertrophic stage of alcoholic cirrhosis."

During the patient's stay in hospital, on three or four occasions subcutaneous and sub-conjunctival hæmorrhages occurred apparently spontaneously. Thrombosis supervened in the left femoral vein. Attacks of vomiting were occasionally troublesome. The liver became, as time went on, slightly smaller in size and less smooth on the surface. Severe pain in the right shoulders was a frequent complaint. Three weeks before death I had carefully examined the patient's abdomen one morning, and had felt the large firm spleen as usual. Within an hour afterwards violent hæmatemesis occurred. On then examining the abdomen the spleen could hardly be palpated, so much reduced in size and softened had it become. The liver, I am inclined to think, was also reduced in size, but this point was doubtful at the time. During the next few days the spleen gradually regained its usual large size. This diminution in the size of the spleen after hæmatemesis can readily be explained on the supposition that the bleeding occurred from some of the veins along the greater curvature of the stomach which are tributaries of the splenic vein. Hæmatemesis recurred several times, and was the immediate cause of death. Only in the last two weeks of life as a terminal condition did ascites develop. Average spleen, 171 grammes; average liver, 1,500 grammes.

Post-mortem, made six hours after death:—All parts very anæmic. Abdomen contained a lot of clear fluid. Liver weighed 1,030 grammes, typically hob-nailed; adherent to diaphragm. Spleen enlarged, 390 grammes; congested, but rather soft. A single red infarct in its anterior border. A small accessory spleen. The edge of the great omentum was adherent to brim and contents of pelvis, the possible cause of thrombosis of left femoral

vein. The stomach contained blood, but no point in stomach or œsophagus could be located as its source, though death resulted from hæmorrhage. The kidneys showed signs of early chronic interstitial nephritis.

The surface of the heart showed numerous "milk spots." The musculature was in a state of fatty degeneration, the musculi papillares of the left ventricle showing fatty striation. The left ventricle was somewhat hypertrophied and dilated. The cusps of the mitral valve were thickened and shrunken at their free edges, and their chordæ tendineæ were shortened; mitral orifice was dilated, admitting three fingers with ease. The right side of the heart was normal in size, as were its valves. The aortic valves were normal; lungs, emphysematous and œdematous.

The points of interest in the case to me were:—

The spontaneous hæmorrhages, as in hypertrophic cirrhosis.

The reduction in the size of the spleen after hæmatemesis, proving the congestive origin of its enlargement.

The very late appearance of ascites.

The opportunity of verifying *post-mortem* that mitral regurgitation can cause a murmur, with its point of maximum intensity at the tip of the left auricle—*i.e.*, in second left intercostal space, half an inch from sternal edge.

CASE II.—J. D., aged forty, admitted to Whitworth Hospital on December 17, 1904, where she remained till her death, six weeks later. A month before admission she complained of vomiting, swelling of the abdomen, and cough. A fortnight later severe diarrhœa came on. On admission the abdomen was much enlarged from flatulent distension, a circumstance which prevented the accurate mapping out of the liver and spleen. The lungs showed evidence of slight chronic bronchitis. The bowels acted six to ten times per diem. The skin and conjunctivæ were somewhat discoloured. Urine contained a slight trace of albumen. In the course of a fortnight some ascites could be detected, and coincidentally the diarrhœa ceased. Three weeks later it became necessary to tap the abdomen, and 105 ounces were drawn off. The cells in the fluid were mostly desquamated endothelium. A week later tapping again became necessary; then vomiting became severe, and death ensued from exhaustion and heart failure.

Post-mortem.—A small, typically hob-nailed liver was found and an enlarged congested spleen. The stomach and transverse colon were densely adherent to the gall-bladder, the walls of which were thickened.

The points of interest in this case were:—The marked flatulence, the late appearance of ascites, and the course of the temperature. This temperature, the distended intestines which marked the real size of the liver and spleen, the violent diarrhoea, at first led to the erroneous diagnosis of some form of ulcerative enteritis, probably tubercular.

CASE III.—A country girl, aged thirteen, when admitted to hospital, was found to be suffering from ascites, enlarged superficial abdominal veins, uniformly enlarged liver and spleen. The diagnosis of alcoholic cirrhosis of the liver was arrived at, but on questioning the patient as to what stimulants she used she declared herself an absolute teetotaller. On further investigation the fact was ascertained that for two years before admission she had almost constantly been taking a medicine of herbs concocted for her by her mother. What the indications for this mixture were I could never precisely learn, but its composition was a decoction of dock leaves with whisky generously added. This patient died in about a month from admission. An autopsy revealed a hob-nailed liver with its usual train of morbid anatomical findings.

CASE IV.—R. W., a farmer, aged twenty-one, previously healthy, and always temperate, in July, 1904, first noticed his urine becoming very dark in colour. At about the same time he noticed his eyes to be of a yellow colour, his skin yellow and itchy. After his skin got yellow he suffered from occasional attacks of vomiting, acid eructations, and a slight dull aching in the right hypochondrium. He was admitted to hospital four months later, in November, 1904. He was then found to be well nourished and muscular. Moderate jaundice was present. The liver was thought to be enlarged on percussion, yet could not be palpated. The spleen was slightly enlarged, it was also thought, but a muscular abdominal wall prevented it from being felt distinctly. Pulse was 60; temperature subnormal. Urine dark and containing a quantity of bile pigments. The stools

were acholic, abundant and clay-coloured. The bowels acted regularly. Blood was normal. By the end of December patient left hospital of his own request, between five and six months after the onset of jaundice. By that time the liver could be made out to be distinctly and uniformly enlarged by palpation. The spleen also could readily be felt enlarged. There was no ascites. The jaundice was as intense as on admission. The stools had, as a rule, remained acholic; occasionally they contained some bile colouring.

I made the diagnosis of cirrhosis of the liver on the following data—Jaundice persisting nearly six months, a gradual and uniform enlargement of the liver and spleen. Though such a condition of the stools as in this case more frequently indicates obstruction of the main bile duct than obstruction of a multitude of smaller bile ducts as from biliary cirrhosis, yet others have found acholic stools in association with hyperthropic cirrhosis. This diagnosis was greatly strengthened by the evident increase of the size of the spleen—a most important point.

CASE V.—M. H., aged fifty, by occupation a butler, was admitted to the Whitworth Hospital complaining of attacks of violent pain in the left lumbar region extending into the left groin. He stated that, with the exception of constipation, he had always enjoyed good health till about three months previously. From that date he began to experience some pain in the left lumbar region, tending to radiate towards the middle line in front, but as it was not severe he did not seek medical aid. Four days before admission he got the first attack of violent pain which made him feel extremely ill, and incapacitated him from all work. The attacks repeated themselves several times before admission; on each occasion the pain radiated to the groin, and was most intense in that situation. On admission the patient was observed to be pallid, and wore an expression indicative of suffering. On examining the abdomen by palpation a tumour was detected in the left iliac fossa. Tracing it inwards from this point it extended almost to the middle line, whilst in an upward direction it extended under the arch of the ribs, but receded from the middle line. The right border of the tumour was well defined, especially below, where it felt firm and almost nodular. The left border of the mass could not be limited by palpation. Doubtful fluctuation was detected, but no pulsation whatever. On

percussion the tumour was absolutely dull, its area fusing with those of the left kidney and spleen. Dulness was also present at the base of the left lung, behind where the breath sounds were diminished. These signs gave rise to the suspicion that the tumour, whatever its nature might be, was pressing the left cupola of the diaphragm upwards. The left loin did not visibly bulge, though the skin there was œdematous. The patient was unaware of the presence of the tumour, so could offer no clue to the duration of its existence. No signs of aortic aneurysm, either thoracic or abdominal, were detected, despite careful examinations with that object in view. Blood films were made which negatived a suspicion of spleno-medullary leukæmia. The urine was normal.

The diagnosis considered most probable was renal calculus leading to hydronephrosis of the left kidney, although the urine contained neither albumen, blood nor pus. The patient lived for seven days in hospital, each evening getting a violent paroxysm of pain relieved only by morphin. After each attack of pain it was noted that the swelling had extended and was tenser than before. Under these circumstances I advised the patient to submit to an exploratory operation. This he refused to do. He died a few hours later, just as the proposed operation would have been undertaken had he submitted.

Post-mortem.—An aneurysm about the size of a small fist, constricted in its middle by the aortic aperture in the diaphragm, was found. It had ruptured into the abdomen extra-peritoneally. An enormous amount of blood clot was found stripping the peritoneum from the post-abdominal wall down to the left iliac fossa, from the under surface of the diaphragm, and even from the left anterior abdominal wall. The left kidney was embedded in the clot, otherwise it was normal. The blood had not penetrated between the spleen and its peritoneal capsule. Nothing else abnormal was found of any note.

The interest of this case, apart from the interest always attaching to an autopsical correction of a clinical diagnosis, lies in the fact that a man could survive for eleven days with a ruptured aneurysm of the abdominal aorta, and for part of this period be able to get about.

A CASE OF PAROXYSMAL TACHYCARDIA.

CASE VI.—P. R., a labourer, aged sixty, was admitted to the

Whitworth Hospital in December, 1904. He stated that four years previously he began to suffer from attacks of palpitation of his heart. They occurred once a month at first, lasting about two hours, but gradually became more frequent and of longer duration. These longer attacks were often interspersed with ones of momentary length. Patient stated that the attacks always began with a burning sensation in the neck, which rapidly travelled to his heart, when instantly his heart began to beat violently and rapidly. He was conscious of the great rapidity. The attacks were always accompanied by lightness in the head. Having had good results in another case of paroxysmal tachycardia by administering bromide of potassium, I at once put this man upon the drug. During his stay in hospital on this occasion the attacks were all short, and gradually grew less frequent, finally disappearing. How much of his relief was due to the bromides and how much to the rest and good hygiene it is difficult to estimate. He left hospital without giving me the opportunity of personally observing an attack. The resident staff on several occasions were present during attacks, and counted the heart beats at something over 200. As a rule, the attacks were so short that they were over before any one could be summoned to his bedside.

The patient returned to hospital early in February of this year (1905), and stated that his heart was as bad as ever again, the attacks having again become longer and more frequent. Two days after admission, on visiting him one morning at 11 a.m., I made the following note:—Patient states that yesterday afternoon he had several short attacks of palpitation. At 8 p.m. the attacks became continuous, lasted all through the night, and only allowed one hour's sleep. He complains of pain below the left nipple and a burning sensation behind the sternum. He says his head is light, but he is able to read a book. He looks calm, a little paler than usual, but appears in no distress. Extremities are warm and of good colour. On looking across his chest, uncountably rapid vibratory movements are seen of the precordial and epigastric areas. The veins of the neck are not distended, and do not fill from below. On counting the rapidity of the heart beats with a stethoscope they are 212 to the minute. Only the first sound can be heard at the apex, very short, yet distinct. At the base a very feeble second sound can be heard after the first sound. That the heart is really beating at this enormous

rate is proved by the facts that the carotid pulse can be counted at 212, and precordial pulsation (more difficult to count) at something over 200. In the radial arteries only 86 *distinct* pulse beats can be counted per minute ; they vary in force more than in rhythm. It is a matter of doubt whether feeble, rapid, indefinite beats may not be felt between the larger ones. The pulse in the brachial and femoral arteries is of the same character as that of the radials. Whilst percussing the heart to try to map out the area of deep cardiac dulness the patient said—" You will find my heart slower now." On counting with the stethoscope, immediately the heart rate was found to be 96, and a minute or so later 84. The storm had suddenly passed, the rapid and violent heart's action subsiding in the usual manner by a sensation travelling from the nipple region to the neck. It is my belief that the heart was somewhat dilated during this attack. The attack lasted 15 hours. The patient was now given bromides again. For the next few days a few short paroxysms occurred, but for the last nine days none have appeared. He is still in hospital.

Between the attacks the heart's rapidity is usually about 80. The heart cannot be demonstrated to be enlarged. The impulse cannot be felt. The sounds, though clear, are feeble, even allowing for a thick chest wall, and a prolonged rest in bed. The arteries are sclerotic, but not markedly so. The urine is normal.

In my opinion the paroxysmal tachycardia in this case is not purely of nervous origin, but is associated with some degenerative change in the myocardium.

ART. IV.—*A Case of Tuberculosis of Lungs and of Knee treated by Professor Denys' Tuberculin.*^a By FRANK J. DUNNE, B.A., M.B., R.U.I.; Physician to the South Dublin Union.

The patient, a girl, aged thirteen years, was admitted to the Royal City of Dublin Hospital, November 2, 1903, suffering from a tubercular abscess of the front of the knee, probably starting in the prepatellar bursa ; it was opened and scraped by Mr. Jameson Johnston.

^a Read before the Section of Medicine in the Royal Academy of Medicine in Ireland on Friday, May 19, 1905.

In January, 1904, when the patient came under the care of Dr. Stoney, there were two long subcutaneous sinuses on the front and inside of the knee; the joint was not involved. The whole area was dissected out and healed up, and she was discharged well on January 24, 1904. About a month after leaving hospital she knocked her knee against the side of the bed, and it broke out again. She attended the dispensary to have her knee dressed frequently. In the beginning of August last she came back to the dispensary as the site of operation had broken down, and there was a large ulcerated area. She was again admitted to the Royal City of Dublin Hospital on August 23. There was great pain on moving the knee, and Dr. Stoney was of opinion that the lower end of the femur was diseased (dead bone being felt at the bottom of the wound), and also the joint. Excision or amputation was discussed, but as she had a very bad cough and the left lung was found to be solid, nearly from apex to base, with tubular breathing and crepitation, and the right lung crepitating for a hand's breadth below the clavicle, and as tubercle bacilli were found in her sputum, it was decided that the disease was too far advanced for operation. She was sent to the South Dublin Union on September 9, 1904.

On admission to the Children's Infirmary, South Dublin Union, there was a large deep ulcer on the anterior and inner surface of the knee, with considerable swelling and inflammation, both above and below the joint, and free discharge. The knee was very painful even when at rest. Temperature, 101° ; pulse, 100; respirations, 30. Patient was coughing a good deal and sweating profusely at night. The body was thin and wasted. The right lung was slightly dull on percussion, and crepitating freely for about three finger breadths below the clavicle. Left lung was dull on percussion down to 4th rib in front, and about two inches below inferior angle of scapula behind, and over this area there were crepitations, tubular breathing, and moist rales. There was copious expectoration, and it was loaded with tubercle bacilli and cocci. The knee was poulticed for a few days, and then treated throughout with iodoform emulsion. The discharge lessened, and inflammation subsided, but there was very little attempt at healing made until after the injections were commenced. The temperature was markedly hectic in type for the first four weeks, ranging from 99° in the morning to 101° at night, and several times touching 102° . After this there was

generally 1° difference between morning and evening. About the middle of October a slight redness and swelling appeared above the ankle, and early in November a small patch of ulceration at inner ankle and heel made its appearance, while the whole leg, from knee to ankle, became red and swollen. When the little ulcer commenced to discharge the redness and swelling subsided to some extent.

Present condition of patient:—Neither cough, expectoration, nor night sweats. The right lung has quite cleared, is resonant, and the breath sounds are normal. The left lung is slightly dull in percussion, giving about the same note as a thickened pleura. Breath sounds are good all over, except a small area close to inferior angle of scapula, where the dulness is more marked, and slight tubular breathing and faint crepitation may still be heard. The knee presents a healthy scar, being adherent to the bone for a space of about 1½ inches. Movement is perfect, and the patient can run and walk without any trouble.

I commenced the tuberculin injections on November 30. My first injections were made at intervals of four days, the temperature being taken five times daily. The first four injections were practically without visible result, except to steady the temperature, which now frequently touched or went below normal. The cough and night sweats both became less frequent. For nineteen injections the temperature was normal at some period of the twenty-four hours, with the exception of two days, though very frequently the variation in the twenty-four hours was as much as 2 degrees. From the 18th of February to the 23rd of March—the 20th to 25th injections—the temperature rose above normal only on seven days. From March 29th to April 4th I gave the 26th and 27th injections, both of which were followed by a rise to 100°, lasting for only a few hours. Since the 6th of April there has never been a rise of temperature beyond 98°, though I have given one cc. of No. III., which is pure undiluted tuberculin.

The small ulcer which I have mentioned at the inner ankle healed up rapidly, and was quite well by the end of December. The knee healed very rapidly up to about the same time, when there was a small patch, about the size of a sixpence, which kept oozing until the end of January. The girl was kept in bed as little as possible, and when the days were fine I had her carried out to the open air, though she felt the cold pretty acutely at first.

As regards treatment.—She has been on an emulsion of cod liver oil and syrup of calcium lactophosphate from the start, and ordinary cough mixtures and atropin and zinc pills up to the time I commenced the injections. Since the 1st of January she has had no medical treatment except the emulsion. The weight at the end of November was 4 stones 8 pounds, and it has gradually increased to 5 stones 11 pounds on May 15th. The sputum in November was crowded with tubercle bacilli and cocci in chains and pairs; in December, few bacilli, numerous cocci; in January, bacilli much more numerous, few cocci; in February, very few bacilli, and, since then, no tubercle bacilli have been found in repeated examinations.

Effect of 33 tuberculin injections on temperature in case under discussion:—On 11 occasions there was a rise in temperature within 48 hours, and usually within 24 hours; on six occasions 1° , and on five occasions 2° . On 4 occasions there was a fall in temperature—once 1° , twice 2° , and once 3° —within 24 hours. On 18 occasions there was no appreciable change of temperature.

I have given altogether 333 injections in various tubercular cases, and after 72 of these there was a rise in temperature within 48 hours, once 4° , five times 3° , eight times 2° , and 56 times of 1° .

There was a fall of temperature after 50 of the injections, four times of 3° , six times 2° , and 40 times of 1° . After the remaining 211 injections there was a rise or fall of temperature of less than 1° .

I have made all my injections into the muscles of the back, a little below and between the scapulæ. In no single instance has a skin abscess or sore of any description arisen. The only local effect was some slight redness and thickening at the site of puncture.

Tuberculin is a liquid obtained by filtering through porcelain a culture of the bacillus of Koch developed in broth (*bouillon de viande*), with the addition of glycerine and peptone after the usual proportions.

It is an absolutely limpid liquid, deprived of all living germs, but charged with the products of the secretion of the microbe.

It exists in the following strengths:—

T. III.	tuberculin,	pure,	non-diluted.	
T. II.	„	„	diluted	$\frac{1}{10}$.
T. I.	„	„	„	$\frac{1}{100}$.
T. O.	„	„	„	$\frac{1}{1000}$.
T. O.	$\frac{1}{10}$	„	„	$\frac{1}{10000}$.
T. O.	$\frac{1}{100}$	„	„	$\frac{1}{100000}$.
T. O.	$\frac{1}{1000}$	„	„	$\frac{1}{1000000}$.

This graduation in strength enables the operator to very gradually increase the dose according to the amount of reaction exhibited by the patient.

I feel that this record of an interesting case, and of a means of treating tuberculosis new to medical science in Ireland, would be incomplete if I failed to express my gratitude to Professor J. Denys, of Louvain, who not only placed his tuberculin at my disposal, but also has at all times most promptly replied to my questions, explained my difficulties, and given me his advice about my various cases.

I am also indebted to Dr. R. Atkinson Stoney for his notes on the case, as also for his testimony at the Academy as to the condition of the patient when leaving the Royal City of Dublin Hospital.

ART. V.—*An Unusual Case of Difficult Labour.* By J. SPENCER SHEILL, L.R.C.P. & S.I.; Assistant Master, Coombe Hospital, Dublin.

The following clinical record is of practical interest:—

Mrs. M'D., 14-para., aged forty-three, was sent to me by Dr. Richard Shaw, of Ranelagh, as a case of hydramnios, with malpresentation of the foetus. After admission to the labour ward of the Coombe Hospital the following facts were elicited on inquiry:—The patient stated that she was pregnant, and she believed that she had passed her full time about a fortnight previous to admission. She had “felt no life” for the past few weeks, and she found that—to use her own words—she was “unusually helpless” whilst carrying this child. She informed me that the previous pregnancies had been uncomplicated, save the last one, after which confinement she got “fever,” and “an abscess formed inside her.” The “abscess broke near her groin,”

and, although her convalescence was tedious, she eventually recovered completely. A scar in the region of Poupart's ligament on the right side gave colour to her statement, and I think it probable that she had had suppuration following pelvic cellulitis. On examination the abdomen was found to be greatly distended—the distension being due to hydramnios of a very marked degree—and it was with difficulty that the foetus could be palpated, lying directly in the transverse position, but freely movable. The foetal heart could not be heard. *Per vaginam*.—The os uteri was found sufficiently large to admit two fingers, and to be very soft. No foetal part could be reached. The patient's left leg was markedly oedematous, as was also the abdominal wall in its lower third. Vague pains of a very slight degree were experienced by the patient, and some bulging of the membranes occurred coincidently with each pain. Under these circumstances I decided to allow a portion of the liquor amnii to drain off, and to turn the child into a favourable position. Accordingly, passing my whole hand into the capacious vagina and two fingers into the os, by means of a stilette I punctured the membranes as high up as possible, Keeping my hand in the vagina, I allowed to drain away, very slowly, a large quantity of fluid; unfortunately the membranes tore very soon, and a sudden rush of liquor amnii was prevented only by using the hand as a vaginal plug. With the help of an assistant the child's head was then brought over the pelvic brim, where it soon “fixed,” and labour setting in strongly the case proceeded without further complication, until the head of the child which, in the course of a couple of hours had advanced to within sight of the vulva, was seen to make no further progress in spite of vigorous pains. On further examination, the head, and in fact the whole child, was felt to be unusually large; so the forceps were applied, and, with considerable difficulty, the head was delivered, the obstruction to its delivery being due, not to its large size, but to impaction of the shoulders over the pelvic brim. The child's neck was very short, and when the head was delivered it could not be drawn sufficiently away from the vulva to admit of a hand being passed in order to relieve the obstruction higher up. Obviously the child had been dead for a week or more, so I proceeded to decapitate. After decapitation, on passing up a hand I found an excessively large pair of shoulders impacted firmly in the pelvic brim. The taking down of both arms, and the application of powerful traction, permitted the child to be

delivered as far as its nipples, but no amount of pulling would make it advance any further. Evisceration was deemed necessary, so after emptying the thoracic and abdominal cavities by traction the child was extracted as far as its umbilicus. At this point it again became impacted. Plainly it was seen that the breech was jammed in the pelvic brim, and was about to give trouble, as it was unusually large, so I considered it advisable to cut the child across as high up as I could reach in the vagina, and, having done so, pressed up the remainder of the infant into the uterus, brought down both legs, and effected delivery by vigorous traction. The placenta was adherent, and required manual removal. There was considerable hæmorrhage, but it was easily controlled. The child, without thoracic or abdominal viscera, weighed $12\frac{1}{2}$ lbs. It seems to me to be just possible that there may have been some connection between the parametritis following her last pregnancy, and the hydramnios with death of the foetus complicating this one.

Ten days later the patient left hospital quite well.

THE LEISURE PROBLEM.

IN a letter to the General Secretary of the Social Institutes Union, Sir Oliver Lodge, D.Sc., LL.D., F.R.S., Principal of the University of Birmingham, says :—"The idea of Social Institutes for recreation and utilisation of leisure ranks among the most hopeful methods of attacking the forlorn gambling and excessive drinking habits of this country. It is an indirect method of attack, and therefore wise. Compulsory closing of doors is no remedy, so long as an open longing to enter them remains. It is the will and the habits that must be amended: it is the leisure hours that must be otherwise provided for. The way to expel a bad spirit permanently is to occupy his place worthily; and until homes are more home-like, and rational family life more possible, Social Institutes and Clubs, not too narrowly or over-governed, must supply the deficiency. These places should be self-governed as far as possible, and should be made sufficiently attractive to give the hand worker something to look forward to at the end of his day's toil; something that will refresh and interest him and give him something to think about during another day. Otherwise life gets too monotonous, the artificial zest of gambling is resorted to, self-consciousness grows too much of a burden, and—as in China, so, alas, in Britain also—relief is sought by bewildering and stupefying that splendid instrument the human brain—the product of æons of evolution—by excess of alcoholic or other drugs."

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Rheumatic Diseases. By. J. ODERY SYMES, M.D. (Lond.); D.Ph., M.R.C.S., L.R.C.P.; Assistant Physician and Bacteriologist, Bristol General Hospital. London and New York: John Lane. 1905. 8vo. Pp. x + 233.

THIS neat volume is the first of a series of *Practitioners' Handbooks*. The type and paper deserve all praise, and these are items which necessarily tell year after year more effectively with the over-read reviewer. The first feature of the text which arrested our grateful attention was the section which deals with the bacteriology. It made us sensibly conscious of the fact that we have lived into a new scientific era! It is surely one of the most striking of bacteriological triumphs—this of being able to add rheumatism to the domain of its “Imperialism.” Not that the mutual relationship of the parasitic colonist and its alien conqueror have as yet been definitely and permanently outlined. No, not by any means perfectly just yet. But there is little chance of the former receiving any definite share in the “Home Rule” of its invaded territories in the future. Regarding the present state of this department of our scientific knowledge we are told that “Achalme, Thiroloix, Bettencourt, and Hewlett have described a spore-bearing anaerobic bacillus as the exciting cause of acute rheumatism, but their conclusions have not been generally accepted, nor have their results been substantiated by subsequent observers. Many workers have found cocci in the exudations, and some have formulated the theory that acute rheumatism is an attenuated pyæmia. Chief among these is Stengel. There is, however, a preponderating weight of experimental evidence in favour of the view that the specific organism of rheumatic fever is a diplococcus which is

capable of resuming a streptococcal form, and which may possibly in course of further involution acquire a bacillary type. Klebs, Popow, Netter, and Dana have described a streptococcus; Riva, Triboulet, Coyon, and Apert described a diplococcus; Wassermann, Westphal, and Malkoff a diplococcus which could be made to assume a streptococcal form. Recently, Poynton and Paine, Beattie, Ainley Walker, and Shaw have described a diplococcus as the specific organism exciting acute rheumatism. This organism, which has been styled the *Diplococcus rheumaticus*, is apparently identical with that described by Wassermann, and very probably corresponds to the diplococci and streptococci found in acute rheumatism by earlier observers. I have myself been able to isolate this diplococcus from the urine of a patient suffering from rheumatic fever, and from the blood of two patients with ulcerative endocarditis following attacks of acute rheumatism. It is, however, always difficult to demonstrate the cocci in the blood and effusions, and better results are obtained by cutting and staining sections of local lesions, such as inflamed synovial membrane, cardiac vegetations, and subcutaneous nodules. The *Diplococcus rheumaticus* measures $.5\mu$ to 1μ in diameter. It is found in pairs or short chains, and may be isolated from the blood, urine, joint fluids, and tonsils of cases of acute rheumatism, or from the valves in endocarditis, the effusion in pericarditis, and the blood in chorea. It grows best anaerobically in a medium of broth and milk acidified with lactic acid, but may be grown anaerobically on blood agar, peptone agar of 1 per cent. alkalinity, milk, broth, or gelatine. . . . Inoculated into rabbits and monkeys by intravenous injection it produces myocarditis, pericarditis, endocarditis, arthritis, chorea, pleurisy, and iritis—lesions identical with those found in rheumatic fever. Inoculations into animals are not, however, always successful. The nature of the acid produced by the diplococcus has not been exactly determined, some observers maintaining that it is lactic acid, others formic or acetic acids."

We have given this somewhat extended extract for the

purpose of offering the reader a definite view of the present state of our knowledge of the bacteriological aspect of rheumatic disease. The writer's summary is a clear and full one. It includes all essential facts up-to-date, while it indicates, at the same time, the elements of uncertainty which have not been hitherto eliminated. Other interesting items of recent views are to be found in the following sentences:—"The chief advance in the bacteriology of rheumatic fever made in recent years is the demonstration of the fact that the diplococcus is a specific organism. . . . Epidemics occur as a rule in years of minimum rainfall, when the soil is dry, the ground-water low, and the earth temperature high. This would point to the saprophytic nature of the specific organism, and to its requiring certain conditions of temperature and moisture in order to obtain a maximum growth. The seasonal curve of rheumatic fever closely resembles that of other infectious diseases, such as scarlet fever (with which it is closely associated) and enteric fever; and, like these, the disease is subject to wide variations of type. Many cases are now on record of the apparently direct infection of rheumatic fever from one person to another." The clinical features are also indicated by the writer as "those of an infective disorder. Thus it is frequently ushered in with an attack of tonsillitis as if it were through these structures that infection took place. The course of the fever, and the successive implication of joints or synovial membranes is suggestive of pyæmia. The relapses are paralleled by the relapses seen in other diseases, such as enteric fever, and the fact that no immunity is conferred by an attack is similarly met with in diphtheria. It is worthy of mention, too, that the disease is controlled by a drug of marked antiseptic value—viz., salicylic acid, and in this it resembles diseases such as malaria, which are commonly associated with parasitic invasion."

The remaining portions of this treatise do not, necessarily, contain so large a proportion of matter of relatively recent birth. Gonorrhœal rheumatism forms the subject of Chapter V. Of its origin we are told that

"There is now a sufficient mass of evidence to enable us to state that this form of arthritis is caused by a general systemic invasion by the gonococcus, and that it is not to be regarded merely as an attack of rheumatism complicating gonorrhœa, or as a pyæmia due to one or more of the many other pyogenic organisms present in the urethral discharge." Of the intimate nature of scarlatinal rheumatism our knowledge is, of course, less clearly defined— in presence of the fact that "We have not at the present time any exact knowledge of the bacteriology of scarlet fever." A strange fact, we may remark, parenthetically, in presence of the almost dazzling illumination of most of the previously dark places of the arcana of disease and its origins, which has been so demonstratively effected by the scientific host of trained bacteriologists during the past quarter of a century! In presence of this occluding veil, Dr. Symes is obliged to decide that "we must regard scarlatinal arthritis as one of the direct consequences of scarlatinal toxin."

The advice and directions given in each chapter under the heading of "treatment" are, we consider, characterised throughout by sound sense and discretion, as well as up-to-date knowledge of scientific theory and clinical practice. Taken as a whole, accordingly, we regard Dr. Symes's text-book as an excellent mirror of the present state of our knowledge of rheumatism.

Folia Hæmatologica: Internationales Zentralorgan für Blut- und Serumforschung, herausgegeben und redigirt von Artur Pappenheim. Berlin: Hirschwald. London: A. Owen & Co. [An International Reference-Journal for Studies relating to the Blood and Serum.] Vol. I. No. 1. Jan., 1904. (To appear monthly.)

WE heartily welcome this new periodical for blood-investigation. Owing to an oversight it has not hitherto been noticed in our pages. So complex and specialised has its subject become during the last few years that the moment seems to have arrived when, without a systematic attempt to collect and co-ordinate the numerous contributions to.

our knowledge in this particular department, it would be almost impossible for anyone to keep his reading on a level with the progress of science. Few men could be in a better position to make this systematic attempt than Dr. Pappenheim, whose name is already well known through his important researches on the mode of formation of the blood corpuscles and the structure and formation of the bone-marrow. In furtherance of his object, Dr. Pappenheim has associated with himself most of the workers of recognised eminence in this department. Amongst the names mentioned on the title-page we observe those of Professors Muir (Glasgow), Sherrington (Liverpool), Drs. Goodall and Gulland of Edinburgh, and Dr. Gustav Mann of Oxford; whilst American aid is forthcoming from Ewing of New York, and Thayer, Cabot, and Simon of Baltimore. With such assistance the editor's task ought not to be a difficult one! Yet, when we glance at the programme he has sketched out for his journal we feel that, however great may be the energy of his *collaborateurs*, his labours are likely to weigh heavily on his shoulders. The subject is to be split up into the following subdivisions:—

I. (a.) Blood-staining.

I. (b.) Normal and pathological morphology and genealogy of the red and white blood-corpuscles.

II. General cellular morphology of inflammation and suppuration.

III. (a.) Histology and function of the blood-forming organs.

III. (b.) Pathology and therapeutics of the so-called blood-diseases as well as of the hæmorrhagic diatheses.

IV. Clinical hæmatology, hæmocytological diagnosis.

IV. (a.) The blood in various diseases, intoxications, and therapeutical (medicamentous and physical) procedures. The leucocytoses.

IV. (b.) Methodology and technical mechanics of clinical blood-examination.

V. (a.) Physiological and pathological chemistry and physics of the blood and its pigment.

V. (b.) The doctrine of internal secretion and auto-

intoxication, chemistry of the sexual contradictories (*Chemie der geschlechtlichen Gegensätze*). Local and general organotherapeutics (iodothylin, adrenalin, spermin, oöphorin). function of the thyroid gland, adrenals, hypophysis; pathology and therapeutics of Graves's disease, Addison's disease, myxœdema, scleroderma, acromegaly, osteomalacia, eclampsia, and allied conditions.

V. (c.) Clinical and forensic demonstration of the blood.

VI. (a.) Animal parasites of the blood.

VI. (b.) The bacteriæmias, bacteriological blood-examination, and sero-diagnosis.

VII. Immunity, serology, and phagocyte theories.

The result of this minute sub-division is that those interested can at once ascertain whatever is new in any particular direction.

We can truly say that, having carefully scanned the contents of the first number, we are of opinion that the principle of a sub-division has stood the test, and will prove very convenient. We cannot conclude this notice without heartily congratulating Dr. Pappenheim, not only on the inspiring style of his introductory remarks, but also on the very clear, and, for that reason, most valuable, paper on "The Theoretical Foundation of the Modern Doctrine of Immunity" which, in conjunction with Dr. Pröscher, he has written for the first number.

We wish him every success in his arduous and useful enterprise.

The First and Second Reports of the Advisory Board for Army Medical Services on the Treatment of Venereal Disease and Scabies in the Army.

THESE Reports were printed for His Majesty's Stationery Office by Eyre & Spottiswoode, printers to the King's Most Excellent Majesty, and may be purchased, either directly or through any bookseller, from Eyre & Spottiswoode, East Harding Street, Fleet Street, E.C., and 32 Abingdon Street, Westminster, S.W., or Oliver &

Bond, Edinburgh, or E. Ponsonby, 116 Grafton Street, Dublin. Price one shilling and sixpence first report, and two shillings second report.

The first report deals with recent publications on the treatment of venereal diseases and scabies in the army. It occupies 85 folio pages, to which an appendix of some ten pages is attached, of official instructions regarding procedure in cases of syphilis, and charts illustrating the relative prevalence of syphilis in the British forces in India and elsewhere, and contrasting the apparent effects resulting from the application and suspension of the C. D. Acts. The report on the treatment of venereal diseases has been compiled from official documents and current literature on the subject. A table is given comparing the incidence of venereal diseases in European armies, from which it appears that those of Germany and France suffer much less than those of other nations, while the army of Great Britain is conspicuously the most seriously afflicted by these affections. The measures adopted for prophylaxis in Germany and France are no doubt a potent factor of the comparative immunity enjoyed by their soldiers. It is noteworthy that they include lectures given to the men, instructing them in the nature and danger of venereal diseases, recommending continence, and advising them to report sick early, and no punishment is awarded unless the disease is concealed. To enlighten the minds of the soldiers as to the gravity and danger of contracting venereal diseases must commend itself to anyone of intelligence as more calculated to exercise a preventive influence than any other prophylactic measure short of the actual suppression of prostitution. The portion of the first report dealing with the treatment is much too comprehensive for it to be dealt with in detail in a notice of this sort, but it is very exhaustive, and weighs the advantages and disadvantages of the different methods in a concise and practical manner.

The second report contains the evidence given by no less than twenty-eight witnesses, comprising a number of senior members of the R. A. M. C., and also civilian ex-

perts, elicited in their answers to 12 stated questions. As might be expected, there is some difference of opinion, but, on the whole, the evidence given is a most valuable record of the conclusions arrived at by men of the largest experience and best qualified to assist the Board in fulfilling its object, and we will look forward with interest to the publication of the third report, which will, no doubt, contain the fruit of its labours.

If the final report is furnished with a complete alphabetical Index of the contents of the whole series, so as to facilitate reference to the evidence and recommendations contained in them, these reports will constitute a very valuable addition to the literature on the subject of venereal diseases.

What Venereal Diseases Mean and How to Prevent Them. Five Lectures given at the University of Copenhagen by ERIK PONTOPPIDAN, Dr. Med. and Chief Physician to Western (Lock) Hospital, Copenhagen; Member of the Danish Dermatological Society. Translated from the Danish by W. JESSEN. London: John Bale, Sons & Danielsson, Ltd. Pp. 79.

THESE lectures were given for the first time under the auspices of the International Conference pour la Prophylaxie Sanitaire et Morale in 1899, and later on in the autumns of 1900, 1901, and 1902. The author states that they are published now, partly in response to requests from various quarters, and partly because he considers the period of private initiative has passed. The delivery of these lectures by Professor Erik Pontoppidan in the University of Copenhagen to an audience of students, not specially medical students, but students belonging to all the faculties, and the speaking to them about the significance and prevention of venereal diseases was a first step on a nearly untrodden road. Among the preventive measures recommended at the International Conference for the Prophylaxis of Syphilis and the Venereal Diseases, held in Brussels in 1899, first and foremost was a general dissemi-

nation of knowledge and information regarding the significance and prevention of these diseases. It is pointed out that one of the chief influences rendering this public danger difficult to cope with is undoubtedly the ignorance of the public concerning these evils, owing to the systematic reserve in which they are shrouded. "To be forewarned is to be fore-armed," and it is upon this maxim that Professor Pontoppidan has acted in the wise conviction that to educate the youth of all classes to realise the personal dangers and far-reaching evils consequent upon contracting venereal disease must largely tend to prevent them from exposing themselves to such risks. He points out that in *la goutte militaire* of the young lieutenant is to be found the pro-genitrix of the urinary and bladder troubles in after-life of the captain and the colonel, and how a gonorrhœa neglected in early youth is the too common, although unsuspected, cause of having a sickly wife and a childless married life.

The author brings forcibly before us the widespread and far-reaching evils arising from syphilis, not only to those who have acquired it by their own indiscretions. He gives statistics, showing that in some communities, while only ten per cent. of the population acquire this disease, 90 per cent. suffer from *syphilis insontium*.

The spread of information upon these significant truths is a step in the right direction, and the example set by Professor Pontoppidan is one which commends itself to the consideration of the authorities of all institutions for the education of young men, and, indeed, to all governing bodies, and we are glad to know that a system of instruction of the kind is contemplated in the British army, and is already in force in that of France.

Materia Medica, Pharmacology, and Therapeutics, Inorganic Substances. By CHARLES D. F. PHILLIPS, M.D., LL.D. (Abdn. and Edin.); F.R.S. and F.R.C.S. (Edin.). Third Edition. London, New York, and Bombay: Longmans, Green & Co. 1904.

THIS useful volume, which was first published in the year

1882, and was again produced as a second edition in 1894, is dedicated to Sir Thomas R. Fraser, to whose ability and research the world of Medicine owes so much. In the third edition the work has been almost entirely rewritten, especially in the sections on oxygen, nitrous oxide, baths and waters, arsenic, silver, iron, mercury, &c., and observations have been made on such new departures as the use of cacodylates, glycerophosphates, and uranium; antitoxin for diphtheria and tetanus; open air for tuberculosis; radiant heat and light for rheumatism, lupus, &c., as well as accounts of recent work on the physiological action of drugs.

Although alphabetical order has, on the main, been adopted in arranging the work, in the clinical division, the non-metals have been placed before the metals, which are placed after the acids. There is a special index of diseases and remedies, and the volume ends with an index of spas and waters. The work is one of high merit, and may be read with advantage by the qualified as well as the unqualified student of medicine.

First Annual Report of the Henry Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis.

A Brief Account of the work of the First Year and a Reprint of the Lectures delivered under the auspices of the Institute during the year. Published by the Henry Phipps Institute, 238 Pine Street, Philadelphia. 1905. Royal 8vo. Pp. 265.

THIS is a brief account of the work of the first year, and a reprint of the lectures delivered under the auspices of the Institute during the year ended February 1st, 1904.

The Henry Phipps Institute was founded on February 1st, 1903, and was incorporated on September 1st, 1903. The purposes of the Institute, as set forth in its charter, are:—"The study of the cause, treatment, and prevention of tuberculosis, and the dissemination of knowledge on these subjects; the treatment and the cure of consumptives. The benefits shall be administered without regard to race, creed, or colour."

The Report commences with a description of the development of the work, giving statistics of the occupation and previous history of the patients treated, &c. The next section treats of the autopsy work. The laryngological work is then dealt with, and this is succeeded by an account of the neurological work of the Institute. There is a special report on the coloured patients of the Institute, and a chapter entitled "A Statistical Study of Tuberculosis in Philadelphia from 1861 to 1903 (inclusive)" is well furnished with diagrams and tabular statements for the purposes of illustration and explanation. The opening sentence of this contribution reads as follows:—"Tuberculosis, a contagious, preventable disease, has decreased in Philadelphia far beyond the expectations of those who are interested in the subject." This gratifying information is full of encouragement, conveyed as it is by the hand of a master of the subject. It must also prove a healthy stimulus to the further efforts of the philanthropic members of the staff of the Institute.

Saranac Lake and its history of tuberculosis is discussed by Edward L. Trudian, M.D., in a special chapter which is illustrated by photographs.

The next lecture is by William Osler, M.D., on the home in its relation to the tuberculosis problem. G. Sims Woodhead, M.D., follows with his views on the morbid anatomy and histology of pulmonary tuberculosis in relation to its general pathology and clinical manifestations.

The administrative control of tuberculosis is the subject-matter of a lecture delivered by Hermann M. Biggs, M.D. The Report concludes with a dissertation on the specific therapy of tuberculosis, and vaccination against the disease by Edoardo Maragliano, M.D.

Patients were seen on the day after the foundation of the Institute (Feb., 3, 1903), and the story of its evolution from a four-story building with a small three-story back building, which "had been put up for lodge purposes, but had been unoccupied for some years," is "here given for the purpose of showing how inexpensively and

easily an old building can be transformed into a fairly good modern hospital in a short time, and how easy it is in any community to make provision for the treatment of the consumptive poor without waiting until a great deal of money is at hand and ideal conditions present themselves."

The pages of this volume bear ample and eloquent testimony to the encouraging results which have crowned the labours of the staff of the Henry Phipps Institute in the first year of its existence.

A Reference Hand-book for Nurses. By AMANDA R. BECK, Graduate of the Illinois Training School for Nurses. Philadelphia and London: W. B. Saunders & Co. 1905.

THE history given by the authoress of the genesis of this very neat, and exceptionally well-filled little volume, is so very interesting, and contains so excellent a lesson in the very best methods of the acquisition—and cultivation and transmission—of knowledge, that we recommend it to the attention of all our readers. It is as follows:—
"As a probationer doing class work and hospital work, and as a graduate trained nurse, I took notes of all the various formulæ, directions, &c., that might at some time be useful to me in the pursuit of my duties. My class work was productive of many valuable items of information; these and such other items as I gathered in the course of my hospital work and while on private duty, and others which were the result of my own experience and observation, I kept in a memorandum book, which soon became indispensable to me, and which I used until the leaves became worn and fell apart. I wrote this memorandum book three times, and the task of its fourth re-writing made me wish that I had its contents in a form more easily preserved. The inspiration followed that my notes in book form would be of general use to most nurses and of some use to many physicians. This little volume is the result. To my own notes, all of which have been submitted to competent authorities for

criticism, I have added several articles by eminent physicians and superintending nurses, which tend to round out the usefulness of the book. I have kept in mind, however, my original intention of producing a handbook of convenient size for quick reference."

We consider that the sketch of her methods thus drafted by the talented authoress constitutes the most perfect programme which we have hitherto happened to meet with of the steps which should lead to the growth of a really useful text-book, and the stages through which its development should be conducted before its final introduction to the outer world. And it (almost necessarily) follows that the resulting volume before us is the very best of the—now almost countless—text-books for the special use of nurses which fate and duty have called us to examine.

Health and Disease in Relation to Marriage and the Married State. A Manual contributed to by Privat-dozent Dr. med. G. Abelsdorff; Privat-dozent Dr. med. L. Blumreich; Privat-dozent Dr. Phil. R. Eberstadt; Geh. Med.-Rat Prof. Dr. A. Eulenburg; Geh. Med.-Rat Prof. C. A. Ewald; Geh. Med.-Rat Prof. Dr. P. Fürbringer; Hofrat Prof. Dr. med. M. Gruber; Dr. med. W. Havelburg; Geh. Med.-Rat Prof. Dr. A. Hoffa; Prof. Dr. med. et phil. R. Kossmann; Geh. Med.-Rat Prof. Dr. F. Kraus; Dr. med. R. Ledermann; Med.-Rat Dr. A. Leppmann; Geh. Med.-Rat Prof. Dr. E. v. Leyden; Prof. Dr. med. E. Mendel; Dr. med. A. Moll; Geh. Med.-Rat Prof. Dr. A. Neisser; Geh. Med.-Rat Prof. Dr. J. Orth; Dr. med. S. Placzek; Prof. Dr. med. et phil. C. Posner; Privat-dozent Dr. med. P. F. Richter; Prof. Dr. med. H. Rosin; Dr. med. W. Wolff. Edited by Geh. Medizinalrat PROF. DR. H. SENATOR and DR. MED. S. KAMINER. The only Authorised Translation from the German into the English Language by J. DULBERG, M.D., of Manchester, England. Vol. II. London: Rebman, Ltd. 1905.

THIS volume completes a work of which we noticed the first instalment several months ago. The pagination is

continuous with that of the former, and the last numbered page here is 1257. The index begins on page 1217, so that it occupies 41 pages—a very desirable feature in a work which includes so many interesting subjects and items, especially when treated by various contributors. The sections of this volume deal with “Gonorrhœal Diseases in Relation to Marriage,” “Syphilis in Relation to Marriage,” “Diseases of the Skin in Relation to Marriage,” “Diseases of the Organs of Locomotion,” “Diseases of the Eyes, with especial Regard to Heredity,” “Diseases of the Lower Uro-genital Organs and Physical Impotence,” “Diseases of Women, including Sterility,” “Diseases of the Nervous System,” “Insanity in Relation to Marriage,” “Perverse Sexual Sensations and Psychical Impotence,” “Alcoholism and Morphinism in Relation to Marriage,” “Occupational Injuries in Relation to Marriage,” “Medico-Professional Secrecy in Relation to Marriage,” and—last of all—“The Economic Importance of Sanitary Conditions.” Such a selection of topics—dealing as they do with a very large proportion of the subjects which are most intimately connected with the home life of the individual and the public life of the community and the nation, with the material prosperity and the spiritual advancement of the various items of the human race in all parts of the world—cannot fail to present matters of the highest and most absorbing interest to every member of the medical profession; and, we may well add, to every philosophic philanthropist and every progressive politician. Hundreds of questions will here be found fully and luminously expounded, the systematic suppression or passive ignorance of which has, most assuredly, been among the most fertile sources of backsliding from spiritual progress in the past, as well as of the much-talked-of “physical deterioration” of the opening years of the twentieth century. In an age of (enforced) education of all classes of the community, and of democratic distribution of power, such discussions can no longer be neglected, and can no longer be held exclusively *in camerâ*. In a civilised community where every man has a vote, it is

much better that he should be trained how to use it to the best advantage, of the community and of himself. The knowledge contained in these volumes will enable the medical man to convey more instructive advice to his clients than he could probably have done without them—except at the trouble and cost of years of special research.

The Historical Relations of Medicine and Surgery to the End of the Sixteenth Century. An Address delivered at the St. Louis Congress in 1904. By T. CLIFFORD ALLBUTT, M.A., M.D., Hon. M.D. (Dubl.), Hon. LL.D. (Glasgow), Hon. D.Sc. (Oxf. and Vict.), F.R.C.P., F.R.S., F.L.S., F.S.A.; Regius Professor of Physic in the University of Cambridge; Fellow of Gonville and Caius College; Hon. Fellow Royal College of Physicians of Ireland, and of the New York Academy of Medicine. London: Macmillan & Co., Ltd. New York: The Macmillan Company. 1905.

THIS extremely interesting and instructive little volume marks another of the successful stands which Professor Clifford Allbutt has made against the mostly continuous ebb of the literary prestige of our profession during the past couple of generations. Indeed, all through the scientific nineteenth century—from almost its beginning, but more especially during its latter (more purely mechanical) half—the subsidence of the medical profession in the scale of literary accomplishments forms one of the incontestible and conspicuous facts of the social history of European civilisation. For many centuries before the nineteenth the medical profession in England ranked almost with the clerical in literary accomplishments. This is saying as much as could well be said, as the clerical profession of the centuries from the fifteenth to the eighteenth represented the highest landmark of the English intellect. And, during those very ages, the literary—prose and poetic—culture of the medical profession bade a fair rivalry to that of the clerical, while it far surpassed that of the legal. At the same time, the culture and advancement of science emanated almost exclu-

sively from our ranks. The exquisite prose and poetic diction of our own countryman, Oliver Goldsmith, still remains, and most assuredly will for ever remain, unsurpassed in English literature for clearness of expression, purity of taste, and perfection of artistic finish. Akenside, Cowley, and Garth secured for themselves permanent niches in the temple of poetic fame in an age which boasted of a preponderance of luminaries whose glare would have effectually extinguished those of any glimmering lights of questionable magnitude. Arbuthnot shone, even in the presence of Pope and Swift. We need not impress upon any reader of the English language the literary merits of Smollett. Even the ponderous epics of Blackmore display culture, if not genius. The botanical genius of Erasmus Darwin, physician, natural philosopher, and versifier, inspired some of the (deservedly) most popular poetry of his generation; in which the readers of the present day can see enshrined some of the very best "evolutionary" ideas of his famous grandson. Robert Glynn, M.D., carried off the Seatonian prize in 1757, and became for a time a recognised leader in the production of religious poetry.

The commandments of prosody were always carefully conned by the aspiring medico of those ages; no candidate for a university degree could afford to ignore any facts or fancies connected with *quantity*. For the thesis for the M.D. of any university had to be composed in Latin, and read by the candidate. This classical taste was often assiduously cultivated by physicians in the depths of the country, who had many off-duty hours on most days. Dr. Johnson—who was by no means given to unmeaning flattery—found data for a high estimate of the classical and literary culture of the medical profession of his time. But half a century or so later, we find Johnson's biographer, Elwin, giving—in his capacity of editor of "The Quarterly"—a woefully different account. He found medical contributors to his review an unattainable item. "It is rare," he wrote to his predecessor, Lockhart, "to meet with one of them who has the slightest idea what style is." And what

shall be said in future generations of the average medical culture of the present day? There is no echo available; so we must only withdraw the query. Not long ago we read, somewhere, somebody's suggestion that the best consolation for the existing state of things is to recollect that probably we could have retained the culture of Aikin and Akenside only at the cost of still abiding under their therapeutic methods. This suggestion involves the collateral assurance of the vast inferiority of the latter, which some sceptical spirits of the present day might possibly call in question.

Whatever view may be held regarding the relative values of the clinical methods of the old centuries and the new, and the presence and absence—conscious or unconscious—of literary and artistic tastes and attainments in the medical profession, the small volume before us may be taken as absolute proof that the co-existence of medical skill, scientific attainment, and literary culture must be regarded as a possibility of the twentieth century; even if Professor Clifford Allbutt has but ever so few contemporaries who, like himself, have reached the highest grade in all three.

First Report of the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. By the Director, ANDREW BALFOUR, M.D., B.Sc., M.R.C.P. Edin.; D.P.H. Camb.; Fellow of the Royal Institute of Public Health; Member of the Epidemiological Society; Medical Officer of Health, Khartoum, and Sanitary Adviser to the Sudan Civil Medical Department. Khartoum: Department of Education, Sudan Government. 1904.

THE initial instalment of the work of the Research Laboratories of the Gordon College—whose equipment was the generous gift of Mr. Henry S. Wellcome to the Sudan Government—is a gratifying (and æsthetically) instructive one. It contains 84 beautifully-printed quarto pages, and deals with “Mosquito Work,” “Biting and Noxious Insects other than Mosquitos,” “Insects and

Vegetable Parasites Injurious to Crops," "Cyanogenesis in Sorghum Vulgare," "General Routine Work," "Eosinophilia in Bilharzia Disease and Dracontiasis," and "The Mosquitos of Egypt, the Sudan, and Abyssinia." The illustrations are numerous and well selected. Those of the insects are extremely well depicted in their natural colours. The Sudanese mosquitos, whose prospect of survival has now become so very precarious, are beautifully represented here. Future generations of scientific entomologists may find life-like impressions in these pages, when the philanthropic hygiene which has now been inaugurated will have wiped all the living originals off the face of the earth! The report before us is an excellent account indeed of the insect enemies of the dweller in North Africa, and the means which he may utilise for their destruction.

We cordially congratulate Dr. Balfour and all others concerned in its production on the way in which their task has been fulfilled.

Les Infections à Trypanosomes au Congo, chez l' Homme et les Animaux. [Trypanosoma-Infections on the Congo in Man and the Lower Animals.] By A. BRODEN, Director of the Bacteriological Laboratory of the Association of Colonial Studies at Leopoldville (Congo State). [Extrait du Bulletin de la Société d'Études Coloniales, Février. 1904. Bruxelles.]

THIS is a pamphlet of about 30 pages, containing (a) an account of three cases of the above infection in Europeans; (b) a reference to a number (not stated) of cases observed by the author amongst the indigenous population; and (c) a description of (1) a case in the ox (with subsequent experimental transference to the goat); (2) two cases in the sheep (with experimental transference to the monkey (Macacs) and guinea pig); (3) a case in the ass. The *post-mortem* appearances of the affected animals and the characters of the trypanosomes are carefully recorded. Although the paper does not contain any novel observations, it must be regarded as a valuable contribution to

the literature of this kind of parasitism. It is illustrated by 11 well-executed pen-and-ink sketches of several sorts of trypanosomes as seen under a magnification of 1,200 diameters.

The Principles and Practice of Asepsis. By ARTHUR STYLES VALLACK, M.B. and Ch.M. (Sydney); L. M. (Rotunda); Surgeon to the Berrima District Hospital, New South Wales. London: Baillière, Tindall & Cox. 1905. Pp. 95.

DR. VALLACK in this little book aims at describing a practical and efficient system of asepsis. "Every surgical procedure," he states, "is a bacteriological experiment, whether the surgeon chooses to call it one or not," and aseptic surgery requires, not an adherence to mere ritualistic practices, but "a just appreciation of the exact reason for every action, however apparently trifling it may be."

The three objects which the surgeon seeks to attain are:—

1. To introduce as few organisms into the wound as possible.
2. To avoid the introduction of germs of high virulence.
3. To maintain the resisting powers of the tissues at as high a standard as possible.

Dr. Vallack considers that the majority of surgeons, while attending more or less strictly to the first rule, do not devote the attention to the second and third which they merit. He insists on the uselessness of chemical antiseptics in aseptic surgery, except in the preparation of the skin, their action in lowering tissue vitality more than neutralising their antiseptic effect, and cites the important distinction which should be made between the inhibition and the destruction of bacteria, as exemplified by the difference which exists between cultivation experiments and inoculation experiments. He exposes the fallacy of conclusions based on negative results obtained by cultivation experiments on culture media with minute

pieces of epidermis removed from the hand, and concludes that the only way to avoid the risks of wound infection by the hands of the surgeon or his assistants is the systematic use of sterilised rubber gloves—not only when operating, but also, and perhaps more especially, while dealing with septic conditions. We do not like Dr. Vallack's method of suturing sterilised napkins to the edges of operation wounds. We think the procedure unnecessary, while, to some extent, it must hamper the surgeon in his work.

The book is simply written and concise. It should prove useful to those who wish to learn the views relative to asepsis held by modern surgeons, who have achieved by means of it results unattainable by purely antiseptic methods.

The Sanitary Inspector's Handbook. By ALBERT TAYLOR, Member of the Royal Sanitary Institute; Holder of the Inspector of Nuisances' Certificate of the Sanitary Institute; late Demonstrator to the Students of the Sanitary Institute; Sanitary Inspector of the City of Westminster; late Chief Sanitary Inspector to the Vestry of St. George, Hanover Square, London; formerly Chief Inspector of Nuisances, Wigan; and Sanitary Inspector, Wallasey. Fourth Edition, with Illustrations. London: H. K. Lewis. 1905. Pp. 455.

MR. TAYLOR has served as Sanitary Inspector in many parts of England, and has brought to the production of this volume his varied knowledge and ripe experience.

Were proof needed of the great value of his work it would be found in the fact that it has now reached its fourth edition. The sanitary officer will find in it a useful guide to the many duties which now devolve upon him, while he will receive from its study many hints which will aid him in his work. Probably the portions of the book which are of most value are those which deal with Acts of Parliament and Local Government Board regulations and model by-laws dealing with sanitary administration in England and Wales, Scotland and

London. The special provisions which are applicable to Ireland have been ignored, and this mars to some extent the usefulness of the book to Irish readers.

The chapters on house sanitation are well written and practical. We observe that the large diagram of the pan closet, which figured in former editions, has disappeared, and trust that this indicates that that most objectionable contrivance is nearing extermination.

The chapter on infectious diseases and disinfection needs amplification. We have not found any mention of Esmarch's method of disinfection as used in Berlin, in which lumps of bread, forty-eight hours old, are used for rubbing down the walls and ceiling of the room to remove the dust, the walls being subsequently sprayed with $2\frac{1}{2}$ to 5 per cent. solution of carbolic acid. Tuberculosis is touched on in dealing with the subject of slaughter-houses and meat inspection, but we think mention might have been made of methods by which the sanitary inspector in his daily rounds can aid in the prevention of consumption, and of the London County Council's By-Laws relative to spitting in public places.

There are omissions in the book, but Mr. Taylor has covered a wide field, and there is a great deal of useful information put into 455 pages, much of it being of a kind which it would be difficult to obtain elsewhere without considerable trouble.

RADIUM RAYS IN HYDROPHOBIA.

ACCORDING to despatches from Milan, Professor Tizzoni, of Bologna, has succeeded in curing rabies in animals by means of exposure to radium. After injecting into rabbits virulent hydrophobia virus, he subjected them periodically for several days to the influence of radium rays. The rabbits thus treated were, he declares, all cured, while others, likewise inoculated, but not subjected to the cure, died of hydrophobia. A pinch of salt, as well as of radium, is indicated here.—*Medical Record*, New York, June 17, 1905.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SIR THORNLEY STOKER, M.D., F.R.C.S.I.
General Secretary—JAMES CRAIG, M.D., F.R.C.P.I.

SECTION OF STATE MEDICINE.

President—SIR JOHN W. MOORE, M.D.
Sectional Secretary—F. C. MARTLEY, M.D.

The PRESIDENT in the Chair.

Friday, April 14, 1905.

Asylum-Dysentery.

PROFESSOR E. J. MCWEENY showed a large series of cultures of an organism which he had isolated by the Drigalski plate-method from the muco-purulent stools of a typical case of this disease. He also showed, for purposes of comparison, parallel cultures of genuine typhoid, and of two strains of *B. coli*, one derived from human stools, and highly pathogenic for rabbits; the other freshly cultivated from a pure water-supply, and presumably non-pathogenic. The dysentery organism was thus shown to have the closest cultural resemblance to the typhoid, the chief morphological difference being its non-motility. The chief cultural differences appeared on Endo's fuchsin-medium and in mannite agar. Exhibitor discussed the question as to the identity of the organism isolated by him with that of Shiga and Kruse. He expressed his thanks to Dr. Heffernan, Assistant Medical Officer at the Clonmel District Asylum, to whom he was indebted for the material.

THE PRESIDENT thanked Professor McWeeney for his very interesting exhibit, which treated of a subject of the greatest importance to workers in Preventive Medicine. He hoped that

during the coming summer Dr. McWeeney would devote some study to the bacteriology of the diarrhoeal diseases of children, as he thought it probable that some, at least, of these cases were due to the presence of the bacillus of dysentery described by Shiga.

DR. A. R. PARSONS expressed the hope that Dr. McWeeney would be able to keep a strain of this micro-organism growing, so that other cases of asylum dysentery might be tested against it. He thought that it was very probable that in the future the treatment of dysentery would largely depend on the bacteriological diagnosis.

Case of Poisoning by Carbon Monoxide.

DR. W. J. THOMPSON described a case which was unusual, in that the gas poisoning was contracted not by inhaling ordinary coal gas, but by being in a small room ($17 \times 8 \times 7$ feet) with a smouldering fire. It took place on one of the dredgers belonging to the Port and Docks Board. The patient was admitted to Jervis Street Hospital on the 12th of Nov., 1904, at 7.30 a.m.; he was in a state of deep coma, and of a dusky, dark-greyish colour; the respirations were short, shallow, and stertorous, about 24 per minute; the pulse small and thready; the first sound of the heart lost; the pupils irregular; the surface of the body cold, and the abdomen retracted; there was also suppression of urine.

He was treated by hypodermic injections of digitalin, strychnin, and ether; by continued artificial respiration with inhalation of oxygen; by blood-letting, and by the application of heat to all parts of the body.

The blood when drawn off had the characteristic bright red colour of carbon monoxide poisoning.

The patient regained consciousness towards evening, and left the hospital in fifteen days perfectly well.

On the first day he passed only nine ounces of urine, on the second fifteen ounces, and on the third twenty-three ounces, and afterwards the normal quantity; no sugar or albumen was detected, and the amount of urea per ounce was normal.

PROFESSOR MCWEENEY stated that he had made an examination of the blood from Dr. Thompson's patient. The first specimen he examined was too small in amount for detailed examination, but presented all the appearances of the presence of CO gas combined with the hæmoglobin. At a subsequent examination no trace of CO gas was found, and the leucocyte count was also normal. Dr. McWeeney thought that Dr. Thompson deserved the greatest credit for his active and successful treatment of the case.

DR. THOMPSON replied.

Strychnin Poisoning.

DR. W. I. de C. WHEELER gave a short account of a case of strychnin poisoning which had come under his notice.

SECTION OF PATHOLOGY.

President—H. C. EARL, M.D., F.R.C.P.I.

Sectional Secretary—A. H. WHITE, F.R.C.S.I.

PROFESSOR E. H. BENNETT in the Chair.

Friday, May 5th, 1905.

Fractures of First Costal Cartilage.

PROFESSOR E. H. BENNETT presented a note on fracture of the cartilage of the first rib, illustrated by the exhibition of some six specimens of the injury. He dwelt particularly on the fact that in a majority of the cases the individuals had been females not likely to have been during life engaged in very heavy labour such as might be assumed to cause new or false joints in the cartilage, and that the recent fractures corresponded in all pathological details with fractures of the cartilages lower down in the chest.

DR. T. G. MOORHEAD asked how frequently Prof. Bennett had found a false joint, and also whether he had ever found a synovial cavity.

PROF. BENNETT replied by showing a specimen which illustrated an attempt at the formation of a false joint.

Anomaly of Cardiac Valve.

DR. MOORHEAD exhibited a case of anomaly of the mitral valve. On the ventricular aspect of the large anterior cusp a small foramen with smooth edges was present which led into a sac about $\frac{1}{3}$ rd inch in diameter. The site and appearance suggested a valvular aneurysm, but the presence of muscular tissue in the wall, the absence of fibrin and the smooth endothelial lining, precluded that view.

Tuberculous Disease of Cæcum, Appendix and Ileum.

DR. R. ATKINSON STONEY showed a specimen of above removed by operation from a female of 23 years of age. A tumour was found in the right iliac fossa, freely movable towards the middle line, to a less extent in an outward direc-

tion, but not either upwards or downwards. Patient complained of chronic constipation and occasional colicky pains. There was marked hyperæsthesia of the 11th dorsal area of the right side. At operation a thickened band was found round the ileum, one and a half inches from the cæcum. The cæcum itself was large, nodular, and thickened. The diseased parts were removed and a lateral anastomosis was performed. On opening the specimen a stricture of half an inch in diameter was found in the ileum, the cavity of the cæcum was almost obliterated, and a second stricture was found in the commencement of the colon, with a diameter of a third of an inch. No ulceration of mucous membrane was found macroscopically, and the specimen was thought to be malignant. Some glands were found enlarged behind the cæcum. When examined microscopically both the tumour and the glands were found to be infected with typical tubercle.

DR. W. J. THOMPSON said the specimen was unusual and interesting, and congratulated Mr. Stoney on the successful result of the operation.

DR. KIRKPATRICK said that during the past winter session he had seen two cases of tubercular disease of the cæcum, both successfully treated by operation. In one case, after removal, the specimen was considered to be malignant, and it was only after very careful microscopic examination that the diagnosis was finally established. This bore out what Mr. Stoney had said. He thought the conditions could not be so rare as Mr. Stoney would lead them to believe, as this was the third specimen he himself had seen during one winter session.

MR. STONEY, in replying, said that he was sorry he had given the impression that tubercular disease of the cæcum was a rare condition. Indeed two London surgeons had lately published the results of eighty-four cases.

Recrudescence of Ulceration of Stomach.

DR. W. J. THOMPSON stated that the specimen exhibited was taken, *post-mortem*, from a patient, aged 29 years, clerk by occupation, who was admitted to Jervis Street Hospital on the 21st of February last. He had contracted syphilis five years ago, and for two or three years previously had been drinking heavily. While under specific treatment for about one year he ceased taking alcohol. Since then he drank freely. During the past six months he lost flesh rapidly. Physical examination showed

the heart to be enlarged and organically diseased ; also enlarged liver, dilated stomach, peripheral neuritis and albuminuria.

At the *post-mortem* examination the stomach was found enlarged, with a well-marked contraction near the pylorus. On opening it there were seven ulcers (two as large as a sixpence) in the region of the pylorus. These ulcers were on the cicatrices of two very large ulcers.

Prior to death, patient showed practically no sign of gastric ulceration.

Congenital Sarcoma of the Eyelid.

MR. ARTHUR BENSON and DR. H. C. MOONEY showed a tumour removed from the upper eyelid of an infant 17 days old. It was then the size of a small walnut. There was no family history of any form of malignant growth in either parent. At birth it was the size of a split pea, situated in the centre of the left upper eyelid. It was darkish in colour, and somewhat resembled a hæmatoma. It changed little for a week, and then grew rapidly. It was lobulated, very elastic in feel, and had entirely lost its dark look, and more resembled a cyst in feel and appearance. Three weeks afterwards recurrence took place in the neighbourhood of the wound ; also over the malar bone and in the orbit. A second operation failed to eradicate it, and a sub-maxillary gland enlarged, also one in the axilla. The orbital tumour was, after three months, the size of a small potato, and similar in character to the original growth removed.

Sarcomata of the eyelid, they said, were rare, and congenital unpigmented carcinomata of the eyelid had not before come within their knowledge.

The tumour, irregularly oval, measured 25mm. \times 20m. \times 15mm. On section it was creamy white, with small signs of vascularity. The skin removed with the tumour was non-adherent, and under the microscope showed no signs of infiltration. Sections of the tumour showed nothing unusual—it was a mixed-celled, non-pigmented sarcoma with few blood vessels, but with a fair number of large dilated empty spaces, the walls of which seemed to be composed of the compressed surrounding tumour cells. Primary sarcoma of the lid is rare, about fifty cases having been reported, many of which were pigmented. As far as can be ascertained this case is the only one of congenital sarcoma of the lid recorded.

DR. W. J. THOMPSON said he had seen the case shortly after birth. The tumour looked then like a small hæmatoma. The skin over it was freely movable, and its base seemed firmly attached to the eyelid. For a week afterwards there was no advance in size, and then it began to grow rapidly.

SECTION OF OBSTETRICS.

President—A. J. SMITH M.B., F.R.C.S.I.

Sectional Secretary—T. HENRY WILSON, F.R.C.P.I.

Friday, May 26, 1905.

THE PRESIDENT in the Chair.

Specimens.

THE PRESIDENT (DR. A. J. SMITH)—An ovarian cyst which illustrates grave complications.

DR. E. H. TWEEDY asked Dr. Smith what method he adopted to separate the intestinal adhesions from the tumour, and what method he adopted to prevent the injured intestines from again becoming glued together

SIR A. V. MACAN thought the suturing of the hole in the bladder an interesting point.

The PRESIDENT, replying, said that as to the method of separating the adhesions, part of the specimen showed portion of the cyst wall which was taken away where it had to be split down. As to the prevention of adhesions, there was a large area of intestine stripped of peritoneum, and he had to put in a number of very fine purse string sutures in parts which appeared dangerous; the omentum, which was very long, was also used to cover them. He found that the single purse string suture closed up the large hole in the bladder very completely on inverting the edges.

DR. E. HASTINGS TWEEDY showed a ruptured uterus.

SIR A. V. MACAN said that personally he criticised "shock" very severely. It might occur, but his interpretation of it was sepsis. It did not depend on mere tearing of the lower uterine segment even with opening the peritoneum, else why was it not caused in operating. The woman was a long time in labour, and the rupture took place some time before admission, so he did not find much difficulty in regard to causation of infection. He remembered a case in the Rotunda of the "rubbing through" variety. There was an anterior displacement, pendulous

abdomen, and the head wore through into the peritoneum. The patient was a long time in labour, and the rupture must have taken place a long time before she showed symptoms of shock. There must have been a subsequent infection. As to the treatment, if the child could be taken out per vias naturales, of course that should be done. If you could stop the hæmorrhage, and the case was not septic, it seemed unnecessary to open the abdomen. If the child had escaped into the abdominal cavity it seemed more rational to open the abdomen, and stitch up the rupture, or remove the uterus.

DR. R. D. PUREFOY said that, personally, he found no difficulty in explaining the causation of shock, apart from the supposition of sepsis. In many recorded cases death occurred a short time after the rupture, and shock must have played a large part in bringing about a fatal issue. The fact of the child being in the peritoneal cavity would account for a good deal of shock. He could not follow Dr. Tweedy's explanation of how these ruptures occurred, and thought that the old theory of the stretching of the lower uterine segment by the active upper segment was sufficient. He thought the pressure of the presenting part had been directed backwards, and, during uterine action, the strain was brought against the posterior part of the uterus. As to treatment, he thought they had abundant evidence to show that no law could be laid down as to whether plugging or laparotomy was better.

DR. JELLETT thought it was not possible to say definitely that there was no such thing as shock. He went on to relate some experiments performed on animals by Crile in America which went to show that death might result from (a) heart failure, when death could be averted by cardiac stimulants. (b) There were also cases in which the peripheral arterial resistance had entirely disappeared, due to vasomotor paralysis.

THE PRESIDENT said there was a good deal in what Sir Arthur Macan had said as to the non-causation of shock by operations which involved opening the abdomen, &c. He thought that septic trouble was largely at the bottom of these cases.

*Discussion on the Report of the Rotunda Hospital.**

DR. JELLETT said he had to congratulate Dr. Tweedy on his first report. He saw that a certain proportion of deaths had occurred in excess of what would probably occur in future

* This Report will be found in Vol. CXIX., p. 401.

years, but most of them were due to causes which were outside the control of the Master. He would specially like to congratulate him on the steps which he had taken to prevent the recurrence of sepsis, as he had introduced many important reforms, such as rubber gloves, finger stalls, separate utensils for each patient, &c. Going on to criticise the report seriatim, he referred to the fatal case of accidental hæmorrhage, and asked Dr. Tweedy how it was that because the membranes ruptured while the plug was being removed he did bipolar version? Had the adoption of this treatment any relation to the theory of compression of the uterine artery which Dr. Tweedy brought forward to explain the action of the vaginal tampon in accidental hæmorrhage? Personally, he did not think that the circulation in the uterine artery could be impeded by a vaginal tampon, nor did he think the application of a bullet forceps and pulling down the cervix could exert any pressure on the uterine artery. He considered that Dr. Tweedy's theories that one could bring down the angle of the uterine artery within reach of a plug was fantastic, since when a vaginal tampon was put in, and a binder applied outside, the uterus was compressed between the two, and did not change its position. Did Dr. Tweedy still hold to his theory? He criticised the arrangement of the Rotunda Reports, saying that he had had occasion to read up many of them to compile statistics, &c., and found it very annoying when there was always a different arrangement or no arrangement at all. It was very difficult to collect information from a whole series of them, as the subjects did not follow one another in a systematic order, and he thought the Reports would gain enormously in value if Dr. Tweedy would classify his subjects in a systematic order and record them in the same way through his whole Mastership.

SIR A. V. MACAN congratulated Dr. Tweedy on his report. He noted the enormous increase there was in the number of cases, and this was very striking. An interesting point also was the efforts made to combat sepsis. Personally he would think the important thing would be first to make a thorough investigation as to where the fault lay. He agreed with Dr. Jellett as to the value of the improvements. He did not consider rubber gloves of such great importance, and could not regard the stoppage of sepsis as being due to those measures. Rubber gloves were the fashion, but he himself did not consider them at all essential. As to the use of antiseptic dressings, he did not think

their outward application to the vulva could be very important in parturition; if it was, the matter had been very insufficiently provided for by nature. He thought there should be free drainage for the lochia. As to the maternity mortality, he still regarded the first case as having died from accidental hæmorrhage, and if plugging took so long to apply that a woman could collapse we should at once go back to Cæsarean section. It failed in its object if it could not be applied quickly, and you could leave it, and say it had stopped the hæmorrhage. He quite agreed with Dr. Tweedy about the abandonment of curettage, and thought it was quite time to give it up. He, like Dr. Tweedy, had been disappointed in the antistreptococcic serum, and to be of any use it would have to be a mixed one. Crédé's ointment might turn out to be of use. With regard to the treatment of eclampsia, the simpler the treatment was the better, and if we agreed with regard to the injection of large doses of morphin, why wash out the stomach also? He said he had seen a case in which hebotomy was performed, and it seemed to him immeasurably superior to symphysiotomy. The only objection seemed to be that a hæmatoma might form.

DR. R. D. PUREFOY said he would like to congratulate Dr. Tweedy on his clearness in enunciating his opinions and his courage in defending them. With regard to some of the new measures, he might say that during his Mastership separate utensils were in use, and sterilised dressings for the vulva had been prepared and were partly in use. He was still a believer in the use of the flushing curette in suitable cases. He said he was at a loss to know what was the contra-indication to which Dr. Tweedy referred. The subsequent treatment of these cases was douching the uterus, and constitutional treatment. Dr. Tweedy stated, page 404, that "the majority of cases, no doubt, get well . . . yield readily to any form of treatment." He thought this a very sweeping statement, and was not prepared to admit that most of the cases were merely sapræmic. During his Mastership one of his assistants, Dr. Lloyd, prepared a series of cases of rise of temperature in which bacteriological and microscopic examinations were made of the contents of the uterus, taken with every necessary precaution, and in most of the cases the examination was made by Dr. Earl. Out of 130 cases 73 had streptococci. He believed that the curette, when used in time, removed most of the organisms, and the patient was then able

to resist the small dose which reached her circulation, therefore, he was not prepared to give up the flushing curette. He would also like to know what were the dangers which Dr. Tweedy believed followed from its use. The report also said:—"If the bacteriological report has been productive of positive results the inside of the uterus is explored by means of a gloved forefinger in order that pieces of retained placenta, membranes, or old blood clot may be removed if any such should be present." That was a very mild proceeding judging by the description of it. With the flushing curette the amount of pain was very slight and shock to the patient absolutely absent. In the proceeding advocated the patient was anæsthetised, the hand was passed into the vagina, there was the shock to the patient, the opening up of the innumerable vents after parturition, the vagina was distended and air freely admitted, a number of avenues for infection made or opened up, and then the finger was passed into the uterus. Besides, he did not believe that the finger would remove the debris in the same short space of time as the curette. The Master urged against the curette that in the two cases in which it was used it failed. That was possible; it sometimes might fail, but the risk in skilled hands was infinitesimal. He thought that the risks of the curette were infinitely magnified by the new method. He was glad to find the Master had not lost faith in constitutional treatment; but why did he recommend mercurial inunction? As to the use of serum, he also had come to the conclusion that it was perfectly useless. He thought the case of accidental hæmorrhage was very interesting. It demonstrated the use of the plug and binder, but also the utter unsuitability of version in these cases. He was also glad to see that the Master had continued the use of Bossi's dilator in helping delivery and in inducing labour. As to the use of the bullet forceps in plugging the vagina, he had never heard of its being done, and he would not do it. In his time, after manual removal of the placenta, there was seldom a rise of temperature. As to rubber gloves, he did not use them himself. He differed strongly from Dr. Tweedy's plan of a "repeated introduction of the gloved hand into the uterus." Surely one ought to do it with as few introductions as possible and without removing the hand if possible. With regard to the treatment of eclampsia, he thought the practice of passing fluid into the stomach a very valuable one, but he considered the statement—p. 414—"Neither vapour baths . . . objection-

able effects" was a very sweeping one. What were the objectionable effects of a vapour bath? He knew of no drawbacks to it. He had always condemned the use of pilocarpin. Again, Dr. Tweedy differed from most authorities as to the wisdom or otherwise of hastening labour in these cases. He himself did not think that labour should be induced if the convulsions had come on, but otherwise he thought that labour should be assisted. He noticed in the Report that practically there was very little information about the extern maternity.

DR. SMYLY congratulated Dr. Tweedy on his most interesting and excellent report. He had made many changes, and he thought they were all improvements. Rubber gloves were of great use, and especially in handling anything that was septic. The using of sponge holders by the nurses when washing the vulva was also of importance. The statement that there were only three cases of mastitis out of over 1,800 deliveries was different from his experience in his own private practice, and he thought that it was caused in nearly all cases by the nurses, who frequently contaminated their hands when washing the patient, and then infected the nipple, and mastitis was brought about.

DR. HORNE, referring to the question of mastitis, said that these cases occurred usually in the second or third week, and after the patient had left hospital, so that probably many returned to the extern department. He congratulated Dr. Tweedy on his report. It was interesting to see that notwithstanding all the advances that had been made a certain proportion of cases did suffer from various forms of puerperal trouble.

The PRESIDENT was glad to see that rubber gloves were used, and thought them a great step in advance. On the question of reckoning morbidity, he thought there should be a uniform standard on the Continent and here, and he considered the German method a good one, and it should be adopted. He congratulated Dr. Tweedy on his very excellent report.

DR. E. H. TWEEDY, in replying, said he first had to thank the members for the way in which they had received his report. Replying to Dr. Jellett, he said the question of the arrangement of the report did not occur to him, and he would be very glad to follow out any suggestions that Dr. Jellett had to offer as to the future arrangement. Dr. Jellett differed from him on the question of plugging the uterus for accidental hæmorrhage, and, as to the first case, Sir Arthur Macan had objected to his

having taken out the plug. This treatment was comparatively new, and he lacked the courage of his convictions. He was now more firmly convinced than ever as to its efficacy, and believed that the plug stops the hæmorrhage immediately. He thought the case exceptional, and had taken out the plug to see if bleeding still continued, and whilst doing so the membranes ruptured. It was then perfectly easy to turn, and he did it instinctively. He still did not know of what the patient had died. Sir Arthur Macan had said that there was no necessity for completely isolating the patients, but he must remember that the beds, mattresses, &c., could not be rendered surgically clean. In a series of four cases of infection which had occurred it was traced to the pan used for catching the antiseptic lotion with which the patients were washed, and it was the only utensil in common use among them. The fact remained that the moment they began to boil the bed chambers, &c., and isolate the patients, the septic condition ceased. The aseptic dressings to the vulva might not be necessary, but were certainly expedient. In dealing with morbidity, he said that no morbidity was ever based on a first twenty-four hours' rise of temperature, and nothing else. A temperature of 100.4° was the basis of the morbidity standard of many of the Continental clinics, but with us 100.8° had marked the limit until lately. A serious condition of septic disease could not exist with a pulse of 90 or below it. He would certainly like to see a common standard adopted. He attached importance to the temperature and pulse taken in conjunction, as the one was a check on the accuracy of the other. He considered that in giving morphin in eclampsia, 2 grains in the 24 hours was plenty. He agreed with Dr. Purefoy and Dr. Jellett that all the so-called improvements were in process of introduction when he went into the Rotunda—it was simply a matter of evolution—but he took exception to the statement that separate utensils were in use, as they were changed from one bed to another and from one patient to another. As to sepsis, Dr. Lloyd had counted 130 cases of poisoning of the uterus, with 73 cases of streptococcus poisoning. He thought that that was very high. Dr. Williams, of America, once held that streptococci were very common in the vagina, but he had since said he had pushed in the germs from the vulva, and this was what probably happened to Dr. Lloyd, and he did not think that anyone would admit the accuracy of Dr. Lloyd's 130 cases. As to the description that Dr. Purefoy had given of his efforts to remove a piece of placenta in the case alluded to,

the uterus had been previously curetted by an assistant-master trained in curetting by Dr. Purefoy. Dr. Lloyd's statistics and Dr. Purefoy's belief in the curette were at variance with the very latest statistics. The serious dangers from curetting were thrombosis and rupture of the uterus. One might curette away the softened muscular tissue as he had seen done. The case, also, that Dr. Purefoy referred to was not an ordinary case—she was in a very bad condition, and had been previously curetted. As to passing the hand frequently into the uterus, he did not believe that anyone could say that the uterus was empty so long as there was anything in his hand. Sensation was abolished if he had anything in his fingers, and it was infinitely more important to take away everything than to exclude air germs. He had never seen bad results from putting the hand in frequently. As to the use of vapour baths, everyone knew they were most depressing, and eclamptic women died from heart failure. Dr. Smyly had fallen into an error in stating that only one case of mastitis was recorded in this report. He again thanked the members very much for their reception of his report.

THE SPIROCHÆTE PALLIDA.

IN a leading article on "Syphilis and its Cause : a new Outlook," the *Medical News* (New York) of June 17, 1905, observes :—
"Some two or three years ago we learn that Bordet and Gengou observed in the plasma of a syphilitic chancre a spiral micro-organism, but failing to subsequently confirm their findings, nothing was said concerning it. Recently, however, as outlined by Flexner and Noguchi, a number of observers have substantiated the finding of a spiral bacterium brought into prominence by Schaudinn and Hoffmann, and named by them *Spirochaete pallida*. The corroboration by Metchnikoff and Roux, in their artificial syphilides in apes, and the present confirmation by the workers in the Rockefeller Institute, makes it appear that a new micro-organism has been found, and that it is possible that it may prove to be the specific organism of syphilis."

RECLAMATION.

Intra-muscular Injection of Mercury in Syphilis.

To the Editor of the DUBLIN JOURNAL OF MEDICAL SCIENCE.

DEAR SIR,—I must ask you to allow me to call attention to a printer's error in the formula for the preparation of Lambkin's Cream, as given in the Journal of May, in my paper upon intra-muscular mercurial injection.

The amount of 2 per cent. parolein carbol. should read $\mathfrak{z}\text{v}$. and not $\mathfrak{z}\text{i}$.

The correct formula is as follows :—

Hydrargyri,	-	-	-	$\mathfrak{z}\text{i}$.
Adipis lanæ anhydrosi,	-	-	-	$\mathfrak{z}\text{iv}$.
Parolein carbol. (2 per cent.),	-	-	-	$\mathfrak{z}\text{v}$.

As cream compounded according to the erroneous formula would be dangerously strong, your readers should be cautioned in having it prepared to be careful to use the formula as it appears at page 26 in Colonel Lambkin's book and not as stated in my paper.

I send you my original manuscript to inspect, from which you will see the error was merely a printer's one.

Yours faithfully,

H. FITZGIBBON, M.D.

[The error was no doubt a printer's one in the first instance, but it escaped both the Author and the Editor in the correction of the proofs for press.—ED., D. J. M. S.].

SANITARY AND METEOROLOGICAL NOTES.

Compiled by the EDITOR.

VITAL STATISTICS

For four weeks ending Saturday, May 20, 1905.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending May 20, 1905, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 19.6 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,959. The deaths registered in each of the four weeks ended Saturday, May 20, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	April 29	May 6	May 13	May 20			April 29	May 6	May 13	May 20	
22 Town Districts	21.8	20.2	21.7	19.6	20.8	Lisburn -	27.3	18.2	18.2	9.1	18.2
Armagh -	—	41.2	27.5	27.5	24.0	Londonderry	22.3	11.2	19.8	17.4	17.7
Ballymena	9.6	28.7	14.4	4.8	14.4	Lurgan -	22.1	17.7	8.9	31.0	19.9
Belfast -	23.7	19.2	19.3	17.9	20.0	Newry -	16.8	16.8	8.4	12.6	13.7
Clonmel -	30.8	15.4	10.3	10.3	16.7	Newtownards	34.3	17.2	5.7	51.5	27.2
Cork -	19.2	22.6	20.5	24.7	21.7	Portadown	25.8	10.3	25.8	15.5	19.4
Drogheda -	4.1	16.3	16.3	16.3	13.3	Queenstown	19.8	—	52.7	13.2	21.4
Dublin - (Reg. Area)	21.9	22.0	23.7	19.5	21.8	Sligo -	19.2	19.2	86.3	28.8	38.4
Dundalk -	16.0	8.0	19.9	16.0	15.0	Tralee -	21.1	21.1	10.6	10.6	15.9
Galway -	54.4	42.7	31.1	15.5	35.9	Waterford	11.7	27.3	29.2	27.3	23.9
Kilkenny -	19.7	29.5	9.8	14.7	18.4	Wexford -	14.0	14.0	28.0	32.7	22.2
Limerick -	17.8	12.3	19.1	27.3	19.1						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, May 20, 1905, were equal to an annual rate of 1.0 per 1,000, the rates varying from 0.0 in twelve of the districts to 8.9 in Lurgan—the 7 deaths from all causes in that district including one from whooping-cough and one from enteric fever. Among the 123 deaths from all causes in Belfast are 4 from measles, one from pyrexia (origin uncertain), one from enteric fever, and one from diarrhoea.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended May 20 amounted to 236—111 boys and 125 girls; and the deaths to 149—69 males and 80 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 20.5 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the area, the rate was 19.5 per 1,000. During the four weeks ending Saturday, May 20, the death-rate averaged 24.9, and was 4.4 below the mean rate for the corresponding portions of the ten years 1895-1904.

The registered deaths (149) include 2 deaths from measles, one death from whooping-cough, and 3 deaths from diarrhoeal diseases—2 deaths were attributed to influenza. In the 3 weeks preceding, the deaths from measles had been 2, 3, and 4; and the deaths from diarrhoeal diseases had been 3, 1, and 3, respectively.

There were 2 deaths from lobar pneumonia, and 3 each from broncho-pneumonia and *pneumonia* (not defined).

The total number of deaths from tuberculosis (all forms of) was 28. This number includes 3 deaths from tubercular phthisis, 15 deaths from *phthisis*, 4 deaths from tubercular meningitis, one death from tubercular peritonitis, and 5 deaths from other

forms of the disease. In the 3 weeks preceding, the deaths from all forms of tuberculosis had been 31, 36, and 32, respectively.

Carcinoma caused 2 deaths, sarcoma caused one death, and 3 deaths were due to *cancer* (undefined).

The deaths of 2 infants, prematurely born, were registered.

Of 22 deaths caused by diseases of the brain and nervous system, 13 were attributed to *convulsions*, and included in the latter were 12 deaths of infants under one year of age.

There were 19 deaths from diseases of the heart and blood vessels, and 17 deaths from diseases of the respiratory system— included in the latter were 14 deaths from bronchitis.

Of 5 deaths from accidental causes, 2 were caused by sewer gas, and one was that of a child of 2 years of age from scalds.

In 10 instances the cause of death was “uncertified” there having been no medical attendant during the last illness. These cases include the deaths of 6 children under one year of age and the deaths of 3 persons aged 60 years and upwards.

Fifty of the persons whose deaths were registered during the week were under 5 years of age (37 being infants under one year, of whom 14 were under one month old), and 39 were aged 60 years and upwards, including 23 persons aged 70 and upwards, of whom 4 were octogenarians, and 2 (a man and a woman) were stated to have been aged 90 and 104 years, respectively.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the “Infectious Diseases (Notification) Act, 1899,” as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended May 20, 1905, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epi- demic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping cough	Cerebro-spinal Fever	Total
City of Dublin	April 29	-	*	*	9	-	-	4	-	-	4	16	-	*	*	*	33
	May 6	-	*	*	5	-	-	1	-	-	3	9	-	*	*	*	21
	May 13	-	*	*	6	-	-	1	-	-	4	11	-	*	*	*	22
	May 20	-	*	*	4	-	-	-	-	5	4	14	-	*	*	*	27
Rathmines and Rathgar Urban District	April 29	-	*	*	-	-	-	-	-	-	1	-	-	*	*	*	1
	May 6	-	*	*	-	-	-	-	-	-	1	2	-	*	*	*	3
	May 13	-	*	*	1	-	-	-	-	-	2	-	-	*	*	*	2
	May 20	-	*	*	1	-	-	-	-	-	-	-	-	*	*	*	1
Pembroke Urban District	April 29	-	2	-	2	-	-	-	-	-	1	-	-	*	-	-	5
	May 6	-	5	-	-	-	-	-	-	-	-	-	-	*	-	-	5
	May 13	-	5	-	-	-	-	-	-	-	-	2	-	*	-	-	7
	May 20	-	*	-	-	-	-	-	-	-	-	4	-	*	-	-	4
Blackrock Urban District	April 29	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	May 6	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	May 13	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	May 20	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
Kingstown Urban District	April 29	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	May 6	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	May 13	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	May 20	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
City of Belfast	April 29	-	*	*	7	-	-	1	-	12	16	6	1	*	*	*	43
	May 6	-	*	*	12	-	-	1	3	11	26	8	-	*	*	*	61
	May 13	-	*	*	8	-	-	5	-	12	14	2	1	*	*	*	42
	May 20	-	*	*	8	-	-	2	2	8	12	9	-	*	*	*	41

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Six cases of measles were admitted to hospital during the week ended Saturday, May 20, 1905, 11 were discharged, there was one death, and 30 patients remained under treatment at its close.

Five case of scarlet fever were admitted to hospital, 5 were discharged, and 51 cases remained under treatment at the close of the week. This number does not include 3 convalescents from scarlatina who remained under treatment at Beneavin, the Convalescent Home of Cork Street Fever Hospital, Dublin.

One case of typhus remained under treatment at the close of the week.

Five cases of diphtheria were admitted to hospital, 4 were discharged, and 13 patients remained under treatment at the close of the week.

Five cases of enteric fever were admitted to hospital, 4 were discharged, there was one death, and 23 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 7 cases of pneumonia were admitted to hospital, 7 cases were discharged, and 15 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, May 20, in 76 large English towns, including London (in which the rate was, 14.1). was equal to an average annual death-rate of 14.4 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 16.7 per 1,000, the rate for Glasgow being 19.4, and for Edinburgh 14.6.

VITAL STATISTICS

For four weeks ending Saturday, June 17, 1905.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending June 17, 1905, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 18.6 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,959. The deaths registered in each of the four weeks ended Saturday, June 17, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	May 27	June 3	June 10	June 17			May 27	June 3	June 10	June 17	
22 Town Districts	19.0	17.5	18.2	18.6	18.3	Lisburn -	18.2	31.8	13.6	40.9	26.1
Armagh -	13.7	6.9	-	13.7	8.6	Londonderry	19.8	17.4	9.9	9.9	14.3
Ballymena	14.4	14.4	52.7	14.4	24.0	Lurgan -	17.7	26.6	13.3	22.1	19.9
Belfast -	20.5	17.3	16.1	20.1	18.5	Newry -	16.8	21.0	12.6	25.2	18.9
Clonmel -	15.4	-	56.4	20.5	23.1	Newtown- ards	11.4	17.2	28.6	17.2	18.6
Cork -	16.4	14.4	21.9	20.5	18.3	Portadown -	20.7	5.2	20.7	20.7	16.8
Drogheda -	20.4	28.6	24.5	12.3	21.4	Queenstown	-	-	26.4	6.6	8.3
Dublin - (Reg. Area)	19.0	19.4	19.3	17.2	18.7	Sligo -	48.0	9.6	4.8	28.8	22.8
Dundalk -	19.9	8.0	16.0	12.0	14.0	Tralee -	10.6	10.6	10.6	21.1	13.2
Galway -	11.7	11.7	11.7	15.5	12.7	Waterford -	25.3	19.5	11.7	27.3	20.9
Kilkenny -	19.7	39.3	9.8	54.1	30.7	Wexford -	23.3	4.7	14.0	14.0	14.0
Limerick -	9.6	16.4	26.0	6.8	14.7						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, June 17, 1905, were equal to an annual rate of 1.5 per 1,000, the rates varying from 0.0 in seventeen of the districts to 22.7 in Lisburn, the 9 deaths from all causes in that district including 4 from measles and one from diphtheria. Among the 138 deaths from all causes in Belfast are 9 from measles, one from diphtheria, 5 from enteric fever, and 4 from diarrhoeal diseases; and the 14 deaths from all causes in Waterford include one from typhus and 3 from whooping cough. The death from typhus registered in Waterford took place on February 11, 1905.

DUBLIN REGISTRATION AREA.

In the Dublin Registration Area the births registered during the week ended June 17, amounted to 169—83 boys and 86 girls; and the deaths to 132—59 males and 73 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 18.2 in every 1,000 of the population. Omitting the deaths

(numbering 7) of persons admitted into public institutions from localities outside the area, the rate was 17.2 per 1,000. During the four weeks ending Saturday, June 17, the death-rate averaged 24.0, and was 4.2 below the mean rate for the corresponding portions of the ten years 1895-1904.

The registered deaths (132) include one death from scarlet fever, one death from diphtheria, and 2 deaths from whooping-cough—one death was attributed to influenza. In the 3 weeks preceding, the deaths from whooping-cough had been one, 3, and 2 respectively.

There were 4 deaths from broncho-pneumonia and 9 from pneumonia (not defined).

The total number of deaths from tuberculosis (all forms of) was 30. This number included 9 deaths from tubercular phthisis, 17 deaths from *phthisis*, 2 deaths from tubercular meningitis, one death from *tabes mesenterica*, and also one death from general tuberculosis. In the 3 weeks preceding, the deaths from all forms of tuberculosis had been 41, 31, and 30, respectively.

Carcinoma caused 2 deaths, and 5 deaths were referred to *cancer* (undefined).

The deaths of 3 infants, prematurely born, were registered.

Of 12 deaths caused by diseases of the brain and nervous system, 5 were attributed to *convulsions*, all of children under 5 years of age.

There were 18 deaths from diseases of the heart and blood vessels, and 16 deaths from diseases of the respiratory system—included in the latter were 15 deaths from bronchitis.

Of 2 deaths from accidental causes, one was due to a fall from a vehicle, and one to drowning.

In 3 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 2 children under 5 years of age, one of them being an infant under 12 months.

Twenty-nine of the persons whose deaths were registered during the week were under 5 years of age (18 being infants under one year, of whom 7 were under one month old), and 28 were aged 60 years and upwards, including 9 persons aged 70 and upwards, of whom 3 were octogenarians, and one (a woman) was stated to have been aged 92 years.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1899," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended June 17, 1905, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epi- demic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Fever	Total
City of Dublin	May 27	-	*	2	8	-	-	2	-	4	5	13	1	•	•	•	33
	June 3	-	•	•	5	-	-	-	-	5	3	3	-	•	•	•	28
	June 10	-	•	•	20	-	-	2	-	2	5	11	-	•	•	•	40
	June 17	-	•	•	4	-	-	2	-	4	11	8	-	•	•	•	29
Rathmines and Rathgar Urban District	May 27	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	1
	June 3	-	•	•	-	-	-	-	-	-	1	-	-	•	•	•	1
	June 10	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	1
	June 17	-	•	•	-	-	-	-	-	-	2	-	-	•	•	•	2
Pembroke Urban District	May 27	-	1	-	-	-	-	1	-	-	1	1	-	•	1	-	5
	June 3	-	4	-	-	-	-	-	-	-	-	-	-	•	-	-	4
	June 10	-	2	-	-	-	-	-	-	-	-	-	-	•	-	-	2
	June 17	-	1	-	-	-	-	-	-	1	1	-	-	•	-	-	3
Blackrock Urban District	May 27	-	•	•	-	-	-	1	-	-	-	-	-	•	•	•	1
	June 3	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
	June 10	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
	June 17	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
Kingstown Urban District	May 27	-	•	•	1	-	-	-	-	-	-	-	-	•	•	•	1
	June 3	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
	June 10	-	•	•	-	-	-	-	-	-	-	1	-	•	•	•	1
	June 17	-	•	•	1	-	-	1	-	-	-	-	-	•	•	•	2
City of Belfast	May 27	-	•	•	13	-	-	-	-	13	14	3	-	•	•	•	43
	June 3	-	•	•	10	-	-	1	-	19	22	10	-	•	•	•	62
	June 10	-	•	•	5	-	-	3	-	14	16	8	-	•	•	•	41
	June 17	-	•	•	9	-	-	5	-	23	10	11	-	•	•	•	58

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Five cases of measles were admitted to hospital during the week ended Saturday, June 17, 1905, 8 were discharged, and 11 patients remained under treatment at its close.

Thirteen cases of scarlet fever were admitted to hospital, 15 were discharged, there was one death, and 52 cases remained under treatment at the close of the week. This number does not include 19 convalescents from scarlatina who remained under treatment at Beneavin, the Convalescent Home of Cork Street Fever Hospital, Dublin.

Six cases of diphtheria were admitted to hospital, 3 were discharged, there was one death, and 15 patients remained under treatment at the close of the week.

Two cases of enteric fever were admitted to hospital, 5 were discharged, and 23 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 12 cases of pneumonia were admitted to hospital, 8 cases were discharged, there was one death, and 19 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, June 17, in 76 large English towns, including London (in which the rate was 13.3), was equal to an average annual death-rate of 13.4 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 15.7 per 1,000, the rate for Glasgow being 16.7, and for Edinburgh 15.2.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of May, 1905.

Mean Height of Barometer	-	-	-	30.139 inches.
Maximal Height of Barometer (13th, at 9 a.m.),				30.478 „
Minimal Height of Barometer (1st, at 4 a.m.),				28.800 „
Mean Dry-bulb Temperature,	-	-	-	53.2°.
Mean Wet-bulb Temperature,	-	-	-	49.2°.
Mean Dew-point Temperature,			-	45.2°.
Mean Elastic Force (Tension) of Aqueous Vapour,				.304 inch.
Mean Humidity,	-	-	-	74.9 per cent.
Highest Temperature in Shade (on 28th),			-	70.9°
Lowest Temperature in Shade (on 4th),			-	36.9°.
Lowest Temperature on Grass (Radiation) (4th),				32.1°.
Mean Amount of Cloud,	-	-	-	57.0 per cent.
Rainfall (on 10 days),	-	-	-	1.182 inches.
Greatest Daily Rainfall (on 1st)			-	.714 inch.
General Directions of Wind,	-	-		N.W., N.E., S.W.

Remarks.

May, 1905, was characterised by a prevalence of winds from Polar quarters. Only in the last week did an equatorial air current assert itself. The polar winds depended on the persistent prevalence of an anticyclone to the north-westward of the British Isles. The month was very dry, sunny and, accordingly, the mean temperature ranged above the normal, although for a few days after the 21st a serious plunge into winter weather was experienced. Of the total small rainfall (1.182 inches), as much as .714 inch, or 60 per cent., fell on the 1st. Absolute drought prevailed from the 11th to the 24th inclusive. The estimated duration of bright sunshine was 225 hours, compared with 195.75 hours in 1904, 178.5 hours in 1903, 178.75 hours in 1902, and 302.25 hours in 1901. The daily mean duration of sunshine was 7.3 hours, compared with 6.3 hours in May, 1904.

In Dublin the arithmetical mean temperature (54.0°) was 1.9° above the average (52.1°). The mean dry-bulb readings at 9 a.m. and 9 p.m. were 53.2°. In the forty years ending with 1904, May was coldest in 1869 (M. T. = 48.2°), and warmest in 1893 (M. T. = 56.7°). In 1904 the M. T. was 53.0°.

The mean height of the barometer was 30.139 inches, or 0.159 inch above the corrected average value for May—namely, 29.980

inches. The mercury rose to 30.478 inches at 9 a.m. of the 13th, having fallen to 28.800 inches at 4 a.m. of the 1st. The observed range of atmospheric pressure was, therefore, 1.678 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 53.2°, or 7.1° above the value for April, 1905—46.1°. Using the formula, *Mean Temp. = Min. + (Max. — Min.) × .47*, the value is 53.5°, or 1.8° above the average mean temperature for May, calculated in the same way, in the thirty years, 1871-1900, inclusive (51.7°). The arithmetical mean of the maximal and minimal readings was 54.0°, compared with a thirty years' average of 52.1°. On the 28th the thermometer in the screen rose to 70.9°—wind, S.S.W.; on the 4th the temperature fell to 36.9°—wind, N.N.W. The minimum on the grass was 32.1°, also on the 4th.

The rainfall amounted to 1.182 inches, distributed over 10 days. The average rainfall for May in the thirty-five years, 1866-1900, inclusive, was 2.020 inches, and the average number of rainy days was 15. The rainfall and the rainy days were, therefore, both below the average. In 1886 the rainfall in May was very large—5.472 inches on 21 days; in 1869, also, 5.414 inches fell on 19 days. On the other hand, in 1895, only .177 inch was measured on but 3 days. In 1896 the fall was only .190 on 7 days. In 1904, 2.685 inches fell on 18 days.

A solar halo appeared on the 7th, and again on the 31st. High winds were noted on 6 days, but never attained the force of a gale. Hail fell on the 3rd. There was a slight fog in the evening of the 16th.

During the month the thermometer did not fall below 32° in the screen or on the grass. The mean minimal temperature on the grass was 42.5°, compared with 42.6° in 1904, 44.3° in 1903, 40.3° in 1902, 41.7° in 1901, 41.6° in 1900, 40.6° in 1899, 42.9° in 1898, 40.9° in 1897, 43.1° in 1896, 41.8° in 1895, and 37.6° in 1894. The maximum reached or exceeded 60° on 19 days, but never fell short of 50°. Once it exceeded 70°—namely, on the 28th, when the reading was 70.9°.

The rainfall in Dublin during the five months ended May 31st amounted to 9.026 inches on 81 days, compared with 11.741 inches on 92 days in 1904, 12.560 inches on 95 days in 1903, 9.973 inches on 81 days in 1902, 7.724 inches on 67 days in 1901, 9.921 inches on 92 days in 1900, 9.652 inches on 87 days in 1899, 10.568 inches on 84 days in 1898, 10.693 inches on 93 days in

1897, 5.971 inches on 70 days in 1896, and a thirty-five years' average of 10.140 inches on 80 days.

At the Normal Climatological Station in Trinity College, Dublin, the observer, Maurice S. Moore, returns the mean height of the barometer as 30.141 inches, the highest reading observed being 30.488 inches at 9 a.m. of the 13th, the lowest, 28.983 inches at 9 a.m. of the 1st. The arithmetical mean temperature was 53.1°, the mean dry-bulb reading at 9 a.m. and 9 p.m. being also 53.1°. Rain fell on 8 days to the amount of 1.118 inches, .710 inch being measured on the 1st. The number of hours of bright sunshine registered by the Campbell-Stokes sunshine recorder was 215.7, giving a daily average of 7.0 hours. The corresponding figures for May, 1904, were 192.5 hours and 6.2 hours.

At Knockdolian, Greystones, Co. Wicklow, the rainfall, measured by Mr. R. Cathcart Dobbs, J.P., was 1.116 inches, distributed over 8 days—.580 inch falling on the 1st. The total fall since January 1st, 1905, equals 9.611 inches on 67 days, compared with 12.027 inches on 84 days in 1904, 15.655 inches on 79 days in 1903, 11.750 inches on 68 days in 1902, 11.205 inches on 65 days in 1901, 16.381 inches on 84 days in 1900, 15.475 inches on 86 days in 1899, 12.445 inches on 78 days in 1898, 14.120 inches on 90 days in 1897, and 5.716 inches on 52 days in 1896.

Dr. Arthur S. Goff returns the rainfall at Lynton, Dundrum, Co. Dublin, as 1.42 inches on 11 days, compared with 2.46 inches on 18 days in 1904, 2.86 inches on 18 days in 1903, 3.26 inches on 22 days in 1902, and 1.09 inches on 10 days in 1901. The greatest daily measurement was .96 inch on the 1st. The temperature in the shade ranged from 75° on the 30th to 37° on the 5th and 23rd. The mean temperature of the month was 54.5°, compared with 53.3° in 1904, 53.1° in 1903, 50.5° in 1902, and 52.6° in 1901.

Dr. B. H. Steede, M.D., reports that at the Royal National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall for the month was .892 inch on 7 days, .340 inch being registered on the 1st, and .230 inch on the 28th. Since January 1st, 1905, 9.615 inches of rain have fallen at this station on 74 days. The highest temperature in the shade was 65.0° on the 18th, and the lowest was 35.0° on the 23rd.

According to Mr. Robert O'B. Furlong, C.B., the rainfall at Cloneevin, Killiney, was 1.83 inches on 9 days, compared with 2.48 inches on 15 days in 1904, 2.54 inches on 15 days in 1903, 2.58 inches on 21 days in 1902, and 1.20 inches on 10 days in 1901. The maximal fall in 24 hours was 1.13 inches on the 1st. The average rainfall in May at this station during the 20 years, 1885–1904, inclusive, was 2.107 inches on 13.8 days. Since January 1st, 1905, 11.00 inches of rain have fallen at Cloneevin on 78 days.

The rainfall recorded by Miss Muriel O'Sullivan at White Cross, Stillorgan, was 1.660 inches on 9 days; the maximum in 24 hours was 1.110 inches on the 1st.

At 21 Leeson Park, Dublin, Dr. Christopher Joynt, F.R.C.P.I., measured 1.405 inches on 10 days, the largest amount recorded in 24 hours being .870 inch on the 1st.

At the Ordnance Survey Office, Phoenix Park, Dublin, rain fell on 9 days to the amount of 1.243 inches, the greatest measurement in 24 hours being .675 inch on the 1st. The total amount of bright sunshine was 225.6 hours, the largest daily amount being 14.5 hours on the 18th.

Mr. T. Bateman, of the Green, Malahide, Co. Dublin, returns the rainfall at 1.283 inches on 10 days, and the shade mean temperature at 51.5° , the extremes being—highest, 69° ; lowest, 33° .

At Cork Mr. Wm. Miller returns the rainfall at 0.90 inch on 9 days, or 1.28 inches below the average. The greatest day's rainfall was 0.27 inch on the 27th. Up to May 31st, the rainfall of 1905 in Cork amounted to 15.87 inches on 88 days, or 0.91 inch above the average.

The Rev. Arthur Wilson, M.A., writes from the Rectory, Dunmanway, Co. Cork, to the effect that 1.805 inches fell there on 12 days, the greatest fall in 24 hours being 0.420 inch on the 27th. There was no rain after the 10th until the 25th, and the rainfall during the first twenty-four days was only .365 inch, of which .180 inch fell on the 1st and .130 on the 10th.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, Co. Dublin, reports that the mean temperature at that station was 53.0° , being 1.4° above the average for May during the previous 7 years. The extremes were—highest, 68.7° on the 29th; lowest, 36.0° on the 23rd. At Bournemouth the mean was 54.3° , the extremes being—highest, 75° on the 30th; lowest, 35° on the 23rd. From these particulars it will be seen that the mean temperature at Bournemouth has

already become higher than that at Kingstown. It will remain higher during all the summer, the heat meanwhile becoming considerable, and at times very oppressive at Bournemouth, while at Kingstown it will be comparatively cool. The range of temperature was 13.5° , at Bournemouth it was as much as 20.1° . The mean relative humidity was 68 per cent., being 7 per cent. less than the average for this month during the previous 4 years. The total rainfall was 1.62 inches on 9 days, of which amount 1.15 inches fell on the 1st; at Bournemouth the rainfall was 0.45 inch on 7 days. The total duration of bright sunshine was 234.8 hours, compared with 225.6 hours at the Ordnance Survey Office, Phoenix Park, 262 hours at Valentia, 216.3 hours at Parsonstown, 230.7 hours at Southport, and 287.4 hours at Hastings.

A NEW DEPARTURE IN MEDICAL EDUCATION.

THE question of the concentration of the teaching of the preliminary and intermediate subjects of the medical curriculum in London at a few centres has long occupied the attention of those interested in medical education, as it has been felt that this step *must* result in greater efficiency in teaching, as well as economy in expenditure. The Westminster Hospital Medical School has been the first to take definite action in the matter, and has just completed negotiations with King's College, by which arrangements have been made for the teaching of physics, chemistry, biology, anatomy, physiology, and materia medica—(that is to say, the subjects of the preliminary and intermediate examinations) to Westminster students at King's College. Students will enter Westminster Hospital Medical School as in the past, and will remain Westminster men, and will not become matriculated students of King's College; but they will be taught the earlier subjects of study at that institution. The scheme will come into effect at the commencement of next Winter Session in October. At the same time, the Westminster School is thoroughly reorganising the teaching of the subjects of the final examination. It is believed that this commencement of a probably more general concentration of the teaching of the preliminary and intermediate subjects of the curriculum cannot but promote the best interests of Medical education in London.

PERISCOPE.

NEW PHYSICAL SIGNS IN DISEASES OF THE CHEST.

A NUMBER of new physical signs described by A. Grober (*Deutsch. Arch. für klin. Med.*, vol. 82, Nos. 3 and 4) are considered by him as far more valuable in the diagnosis of intrathoracic disease than diascopy. It is but little known that difference in the size of the pupils is a common symptom of apex tuberculosis. The pupil of the affected side is generally wider, since the sympathetic nerve is irritated by the inflamed pleura. Another valuable sign is the behaviour of the veins of the chest if an expiratory effort is made with closed glottis as in Valsalva's method. Normally, the vessels on both sides swell equally, but with tumours, aneurysms, &c., the veins which are affected by the compression will be more prominent. Normally, the pupils will contract somewhat during expiration and dilate slightly with inspiration; with Valsalva's method, there will be a gradual, slight dilatation during the deep inspiration preceding the expiratory effort, and a gradual, slight contraction during the latter. The following variations occur: (1) Only one pupil will show the normal contraction; the other will dilate. On the side of the latter, pathological lesions of definite localisation will be found in the thorax. (2) If both pupils dilate instead of contracting during forced expiration, the disease is bilateral. (3) If there is a difference in the size of the pupils during normal respiration, and the dilated pupil widens still more during Valsalva's experiment, while the contracted one will become normal, intrathoracic disease on the side of the wide pupil is probable. (4) If the pupils differ in size with quiet respiration but dilate with Valsalva's method, bilateral intrathoracic affection is probable. If the smaller pupil becomes equal in size or larger than the second one, the disease probably also affects both sides, if local disease or organic disease of the nervous system can be excluded. Absence of all these phenomena does not argue against intrathoracic disease. The percussion note obtained over the manubrium sterni is also of the greatest value. In real or inflammatory tumours of the mediastinum there will often be dulness with closed mouth and dull tympany with open mouth, or dull tympany with closed mouth and Wintrich's

change of percussion with open mouth. If the posterior mediastinum is chiefly affected, the note will be purely tympanitic with closed mouth ; with distinct Wintrich's change on opening the mouth.—*Medical News*. (New York). Saturday, March 18th, 1905.

FRENCH HEALTH RESORTS.—ANNUAL VISIT OF MEDICAL MEN AND STUDENTS (VOYAGES D'ÉTUDES MÉDICALES).

ALTHOUGH we have already noticed this excursion (see the Number of this Journal for May, 1905, Vol. CXIX., page 399) the following information will be useful to our readers. This year's visit will comprise the most important stations in the Western Pyrenees. It will start from Luchon on Friday, September 1st, and terminate at Arcachon on Thursday, September 14th. The price to be paid, which includes everything between these two places, is £12. There are no extras of any kind. The travelling is by first class special train, and the accommodation is the best which each place has to offer. In order to reach Luchon, a ticket (1st or 2nd class) at half price will be issued from any selected point on French territory, and a similar reduction will be made on the ticket from Arcachon to the point of departure from French territory. The district to be visited is remarkable for its extreme beauty and interest, and the stations are famed for their therapeutic value. Among them are such well known resorts as Luchon, Cauterets, Saint-Sauveur, Eaux Bonnes, Pau, Biarritz, Dax and Arcachon, together with many of minor importance. The particular features of each place are briefly described by Dr. Landouzy, Professor of Clinical Medicine at the University of Paris. Medical men (who may be accompanied by their wives), medical women, and students in medicine are eligible to take part in the trip. Names must be sent in so as to reach Paris on or before August 15th. They should be accompanied by the subscription (£12), which may be in the form of an ordinary English cheque, payable to Dr. Carron de la Carrière, 2 Rue Lincoln, Paris ; or to Dr. Leonard Williams, 8 York Street, Portman Square, W., from either of whom any further information may be obtained.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Adrenalin Suppositories.

MESSRS. PARKE, DAVIS & Co., 111 Queen Victoria Street, London, E.C., have recently added adrenalin suppositories to their long list of pharmaceutical products. Each suppository contains one part of adrenalin in combination with one thousand parts of oil of theobroma. The introduction of adrenalin suppositories provides the medical profession with a hæmostatic and vaso-constrictor in a convenient form adapted to the treatment of a variety of rectal diseases. Particular complaints which have been treated with adrenalin suppositories with good results are cancer of the rectum, hæmorrhoids and rectal irritation. In the treatment of dysentery, adrenalin suppositories may prove of benefit in allaying the tenesmus, and in the hands of the gynæcologist they may commend themselves for the control of hæmorrhage, due to erosions or cancer of the cervix uteri, or for the treatment of vaginal leucorrhœa or gonorrhœa in the female.

“Borofax.”—Antiseptic Soothing Emollient.

“BOROFAX” is an emollient possessing antiseptic and sedative properties, which has been recently introduced by Messrs. Burroughs, Wellcome & Co., London. It is superior to ointment, or glycerin of boric acid, in therapeutic action, readiness of absorption, pharmaceutical elegance and freedom from rancidity. It encourages healing of superficial lesions, and, therefore, is a valuable application for chaps, burns, scalds, and abrasions. “Borofax” may be used with advantage in the treatment of eczema and many other skin affections, and also in excoriation or disease of mucous surfaces. It is beneficial and soothing to the skin after driving, motoring, cycling, or exposure to extremes of temperature. “Borofax” is supplied in collapsible tubes of two sizes.

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OF

MEDICAL SCIENCE.

AUGUST 1, 1905.

PART I.

ORIGINAL COMMUNICATIONS.

ART. VI.—*Fractures of the First Costal Cartilage.*^a By
E. H. BENNETT, M.D., F.R.C.S.I.; Professor of Surgery
in the University of Dublin; Surgeon to Sir Patrick
Dun's Hospital.

THIS year is a very proper time to take note of our knowledge of fractures of the costal cartilages, for this is the centenary of these injuries. In 1805 Lobstein published the first exact observation of them at Strassburg. I have a special right to refer to the details of one of these injuries—fracture of the first costal cartilage—for I find that I am credited by a writer in Guy's Hospital Reports with being the first to describe the injury. He says: "I can only find one instance of fracture of the first costal cartilage published, and, curiously enough, I think that there is no doubt that it was not an example of fracture of this cartilage, but an instance of dislocation of the joint which I have shown is developed in the ossified first costal cartilage, and which was not recognised at that time. The case I refer to is one published by Dr. Bennett in the *Dublin Quarterly Review*, March, 1876." Apart from the inaccuracy of the reference, for as we all know there is no such Review, I feel that my claim for priority

^a Read before the Section of Pathology in the Royal Academy of Medicine in Ireland on Friday, May 5, 1905.

in this matter is rudely shaken in the very first detail, for the next sentence assumes that I could not recognise a recent fracture of the cartilage of the ribs on the table of the *post-mortem* room.

The author of this criticism quotes some one to this effect: "Fracture of the first rib does not occur because it is sheltered by the clavicle." And sets up the opposite: "Curiously enough, the reverse of the teaching of the time is true, for the very reason given—namely, 'the first rib is frequently broken because it is sheltered by the clavicle.'" These passages evidently contemplate the fracture of the first rib, or of its cartilage, by direct injury—or the more ordinary forms of indirect injury. I would present to the Section a few very brief notes on the subject of fractures of the first costal cartilage as the accidents which have come under my observation during a very few months illustrate them. I will, if anyone likes, accept the view that a false joint, or rather a new joint, may be formed in the cartilage of the first-rib and present difficulties of diagnosis when met on the dead-house table or in the formal progress of dissection. This concession may be made to the author I have quoted in regard to the class of the laborious hodman and the like. Of the life histories of these examples our knowledge is very uncertain. The facts of the cases I would now record admit of no doubt, even though they have been observed by so incompetent an authority as myself; and, in the first place, I would direct attention to the fact that more of my subjects were females than males—not dock labourers or hodmen or the like. I have in hands the pathological details of over five and twenty actual specimens of fractures of the costal cartilages in general, including the first, many of which I have published from time to time in the old *Pathological Transactions* or in the *Records of this Academy*. I now bring before the Section six specimens of fractures of the first cartilage, and I would record an example observed in the living which presents special interest from the mode of its cause.

To take the last first.

I have already recorded the observation of the rare occurrence of fracture of the costal cartilage from muscular action (*Dublin Journ. of Med. Science*, Vol. LXI., page 207, 1875).

Last winter (January 14, 1905) I had the good fortune to meet with a perfect example of this rare accident, confined to the clavicle and first rib on the left side.

M. B., aged fifty-seven years, a carter, was loading wheat from his cart into some canal craft. In doing this he had to place on the scales each sack, with its mouth open, full of the regular twenty stone of grain which goes to make a sack. In delivering the sack after it passed the scales, M. B. caught the corners of the open mouth of the sack and lifted it on to his right shoulder. On doing this he lost his balance and fell backwards with the sack to the stage on which he should step down—some three feet. In the effort he felt his collar bone and rib yield without his striking on his chest. He had a fracture of the clavicle between the conoid and trapezoid ligaments, and of the cartilage of the first rib on left side. He left hospital on February 7th fairly recovered. In giving the account of his accident he was very clear and precise, being certain that no blow struck his collar bone or chest wall on the left, and that he did not strike these parts in his fall.

My next case is as follows :—

On January 30, 1905, at 2 p.m., a labourer, aged fifty years, was admitted to Sir Patrick Dun's Hospital. He had been crushed by a piece of timber weighing over a ton. He and others were engaged in shifting this when it slipped and crushed his chest. He lived until 12 30 a.m. in the night, and died with failure of breathing and rapidly developing surgical emphysema. Four or five ribs on each side were broken, and the pleuræ and lungs were much torn ; the liver and spleen were also lacerated.

I now place before the meeting the recent fractures of the first costal cartilages taken from his body, which could not by the merest novice in pathology be mistaken for new or false joints.

Next I present the sternum and portions of the ribs attached which were removed from the body of an aged woman who was killed on, or very close to, Baggot Street Bridge by being run over by a motor car one day last winter. Here are the recent fractures of the two first cartilages, and no doubt can be entertained of their characters, nor can there be any suggestion that the specimens are examples of

new or false joints produced by a specially laboriously spent life. The patient was an old and feeble woman, and was killed on the spot where she fell.

Her first costal cartilages have been broken after the constant pattern of such lesions, and bear all the traces seen in such recent injuries. With them were many other rib fractures and a fracture of the sternum; but at this time we are not concerned with these. I want only to establish before the Academy the verity of my specimens and of my records of them.

3449 (1892). Front of the thorax of an old woman who was killed last week at the gas works. "On the left side the cartilage of the first rib is broken transversely about its middle; on the right side the ribs are broken from 1-10."—Verdict, not guilty—Chief Baron, &c.

129. Sternum and ribs; fractures of first ribs at their necks, and of the cartilages. Sternum separated at the joint of the manubrium and gladiolus.

1639. Dislocation of clavicle backwards, with fracture of the first costal cartilage on the left side.—*Trans. Path. Soc. of Dublin*, 1881.

2544. Ununited fracture of the first costal cartilage at the junction of the bone and cartilage; the convex embedded end of the cartilage alone remains attached to the bone. (See Klopsch. *Dissertatio Inauguralis*.) This specimen was given to me by Mr. —, who found it in the dissection of the neck of a female subject who had fractures of the lower ribs, also on the right side. No life history.

3843. Cartilages of a pair of first ribs and manubrium sterni given to me by Dr. Kennan, of the Infirmary, Birmingham. John Maddock, aged sixty-three. Phthisis. No history of injury.

Man killed loading timber on North Wall. Recent fracture of both first ribs at cartilages.

Old woman killed at Baggot Street Bridge. Both first cartilages fractured.

ART. VII.—*Hodgkin's Disease occurring in Twins.*^a By
GEORGE PEACOCKE, M.D., F.R.C.P.I.; Assistant Physi-
cian to the Adelaide Hospital.

SINCE the year 1832, when Dr. Hodgkin first described the main clinical features of this disease, which now bears his name, numerous contributions on the subject have appeared, and many single cases and collections of cases have been published; but as yet the ætiology and pathology of the disease remain obscure.

Although the two cases which have recently come under my care throw little fresh light on the subject, one or two points in connection with them are, I think, of some special interest.

Frank and Charles W., twins, aged four years, came first under my notice in the early part of this year. Their father and mother are both alive and healthy, and, as far as I have been able to ascertain, there is no history of tuberculosis or any other so-called hereditary disease on either side. They have had six children. The first child died at birth, having reached full term; the second lived to be four years old, and then died after an illness of about twelve days from "gastric fever, followed by water on the brain." The third and fourth, both girls, aged eleven and seven respectively, are alive and in good health, and the remaining two children are the subject of the present communication. Both these children had been very healthy until the summer of 1902, when they contracted measles, as a result of which they both suffered for some time from enlargement of the cervical glands. I may add that the two girls also had measles at the same time, but in their case there was no glandular enlargement. Though this enlargement of the glands subsided there seems to have been some tendency to slight temporary enlargement on subsequent occasions, but in April, 1903, the glands of the right side of the neck of Frank enlarged and gradually increased in size. In August of the same year he was brought to the Adelaide Hospital, and the glands were removed by Mr. Gordon. They were examined microscopically at the time, and no evidence of tuberculosis was found. He left the hospital in three weeks.

^a Read before the Section of Medicine in the Royal Academy of Medicine in Ireland on Friday, November 11, 1904.

time with a slight puffiness behind the ear. This apparently increased in size, and in about two months time his mother noticed some fresh glands enlarging. In January of the present year she brought him to the out-patient department of the hospital, and he was admitted again under Mr. Gordon's care. As the child was pale, and there was considerable enlargement of the glands on the right side of the neck, I was asked to see him, and from that time on took charge of the case. I had him under observation until the middle of March, when, against my advice, he was taken home. His condition while in hospital remained much the same. He was bright and cheerful, and had a good appetite. The glands on the right side of the neck as far down as the clavicle were very much enlarged, of the soft variety, but showed no sign of breaking down or of inflammatory change. No other superficial glands were involved, and there was no evidence of any enlargement of the internal lymphatic glands. The spleen was, however, increased in size, but not to any great extent. The temperature was, as a rule, normal, but on two occasions, with exactly a month's interval, he had pyrexial attacks which lasted a few days, and from the account his mother has given me I believe these attacks continued, with somewhat shorter intervals, until the time of his death. A blood count made on the 2nd of February showed—red cells 3,500,000 per c.m., colour index normal; white cells 48,600 per c.m. A differential count, kindly made by Professor Scott, showed polymorphonuclears 15 per cent., lymphocytes 83 per cent. On the 20th of February the white cells were only 8,200 per c.m., and the differential count showed 57 per cent. polymorphs and 40 per cent. lymphocytes. Numerous counts were made during his stay in hospital, but on no occasion did the white cells again rise higher than 12,000, and the differential count resumed the normal condition. After his removal from hospital I did not again see him until a few weeks ago, when he was brought to the hospital, but his mother would not allow him to be left there. The disease had advanced considerably. He was unable to walk, extremely anæmic, listless and fretful at times, his face puffy, the lips and conjunctivæ almost colourless, his pulse small and feeble, and it was quite evident he could not live long. I visited him subsequently at his home, and examined him carefully. There was little increase in the glandular enlargement; a few glands in the right axilla were involved, but the left sides of the neck and

axilla and both groins were not implicated. The spleen was greatly enlarged, and reached as low as the umbilicus. Professor Scott kindly made a blood count for me and found red cells 1,300,000. The hæmoglobin percentage could not be accurately obtained, as the pipette got accidentally broken before the examination was completed, but as nearly as he could ascertain it was about 10 per cent., certainly considerably below 20 per cent. The white cells were 8,400. A differential count showed polymorphs 76 per cent., lymphocytes 21 per cent. His temperature was 101° , he had a short cough, but I could detect no evidence of any pulmonary mischief. He very rapidly got weaker, and died on the 30th of October, eighteen months after the disease first definitely made its appearance. I was unable to obtain a *post-mortem* examination.

The other boy, Charles, came under my care on the 22nd of February. About three weeks previous to this his mother noticed a swelling behind the left ear, which was soft at first, but had got harder, and increased in size. His general health was good, he was in the best of spirits, and had a very good appetite. With the exception of some enlargement of the glands on the left side of his neck there was nothing else abnormal found on examination. His spleen was not enlarged, and during the three weeks he was in hospital he had no pyrexia. Examination of the blood showed a normal condition. He was also taken home last March, and I lost sight of him until early last month, when he was brought to the hospital to have the enlarged glands removed. I examined him carefully, and could detect no evidence of glandular enlargement, with the exception of the group of glands on the left side of the neck. His spleen was not enlarged, and the blood count showed 4,000,000 red cells per c.m., hæmoglobin 85 per cent., white cells 8,500 per c.m. Mr. Heuston removed all the enlarged glands, and Professor Scott has kindly furnished me with the following report on the histological characters of the glands:—"The enlargement of the lymph glands is due to a general enlargement of the cellular portion of the glands. A few of the larger trabeculæ remain, but the smaller ones are very inconspicuous. There appears to be a slight increase of the fine connective tissue between the cells, visible by special staining, which gives the whole gland an unusual hardness." He is still in hospital, and it will be interesting to watch the further progress of the case.

The chief point of interest in these two cases appears to me to lie in the fact that the disease manifested itself in the two boys who were twins.

This may have been a mere coincidence, or possibly it may point to some constitutional weakness shared by each, which rendered them more liable to contract the disease, or it may be taken as a factor in favour of the infectivity of this disease—the two boys being all their lives playmates together, and being, as I know, very much attached to one another.

Another curious point was the selective manner in which the glands were affected. In one boy the glandular enlargement was entirely confined to the right side of the neck and right axilla; in the other the left side of the neck was alone affected.

The boy who died, and who was apparently first affected by the disease, had enlargement of the spleen the first time I saw him, in January, 1904, and the increase in anæmia depended, as far as clinical observation can tell, more on the increase in size of this organ than in an increase in the glandular enlargement of the neck. The other boy, who is now alive and in good health, and, as far as his blood count shows, little if at all anæmic, had certainly as great an enlargement of the cervical glands, but as yet no palpable splenic enlargement.

If the account of the mother can be fully relied upon, and I have no reason to doubt it, the first damage to the glands resulted from an attack of measles, six months before definite signs of the disease appeared.

In the *Philadelphia Medical Journal*, T. C. Ely describes a case of Hodgkin's disease in a child, four years old, the first sign of glandular enlargement having occurred eighteen months previously, after an attack of whooping-cough.

In 1865 Trousseau pointed out that in some cases the enlargement of the lymphatic glands was, in the first place, due to some local source of irritation in the neighbourhood of those glands which first became affected.

While these facts point to a definite predisposing factor in many cases of Hodgkin's disease, and possibly, if careful examination was made in all cases, some source of irritation could always be found, it does not answer the question, What is the cause of the disease?

Hodgkin's disease is, comparatively speaking, rare. Glandular enlargement, whether as a result of some of the infectious diseases or due to tubercular, syphilitic or other poisons, is very common.

A considerable amount of work has recently been done in connection with this and similar affections, by Flexner, Moorhead, and many others, and it would seem as if we were on the threshold of important discoveries, which will demonstrate not only the rôle of the lymphocyte, but also the pathology of Hodgkin's disease and those other diseases apparently so nearly allied to it.

ART. VIII.—*The Treatment of Ringworm of the Scalp by the X-rays.*^a By WALTER CHARLES ORAM, M.D., B.Ch., B.A.O., Univ. Dublin; D.P.H.; B.A. R.U.I.; Physician in charge of the Electrical Department of the Liverpool Skin Hospital.

[The author desires to express his thanks to Dr. Stopford Taylor, by whose kind permission the following communication is made.]

WHEN the ringworm fungus attacks the hairy portions of the body it is a well-known fact that the prognosis as regards the duration of the disease and its amenability to treatment by the methods usually employed is anything but hopeful. Thus, while a ringworm of the glabrous portions of the body may be completely eradicated by a few applications of almost any parasiticide ointment or tincture of iodine in a few weeks, yet, when the scalp becomes affected the most vigorous treatment may be employed, and the case will drag on for a year to eighteen months until, perhaps, treatment is despaired of, and the disease wears itself out and dies a natural death.

The real cause of this difference is, no doubt, that the remedy never comes in contact with the disease in the hairy regions, studded as they are with follicles, wherein the spores can lie secure from any antiseptics short of those which would destroy the skin and leave a permanent baldness.

^a A Thesis read for the Degree of Doctor of Medicine in the University of Dublin, July, 1905.

Having appreciated this difference, it follows as a logical sequence that if a hairy region that is affected by ringworm can be temporarily reduced to the condition of the glabrous portions of the body by a process of epilation, the subsequent treatment of the disease will be much simplified.

To the earlier workers with the X-rays it soon became evident that in them we have become possessed of a most efficient temporary depilatory agent, and it was not long before the knowledge was turned to effect

Sabouraud has published [*vide British Journal of Dermatology*, for February, 1905] particulars of the method which he employs in Paris for the treatment of ringworm among the children who attend the "École Lallier" there, which is set apart for those suffering from this disease, and he states that the duration of treatment has been reduced from two years to one month since the adoption of the X-ray treatment, with a consequent reduction in the cost to the Assistance Publique from 2,000 francs to 260 francs per head.

Sabouraud's method is to give to each spot affected—the rest of the head being protected—a single exposure of such a duration as to cause the hair to fall out in the course of a fortnight or so, after which the disease in that particular area is cured.

Since different tubes, and even the same tube under the varying degrees of vacuum which it is bound to pass through during its use, will give rays differing greatly in their therapeutic power, he found it necessary to use some device by which a standard dose of the rays could be administered. In the Holz knecht's Radiometer he found an instrument which answered this purpose fairly well, and in his earlier cases I believe Sabouraud used this, though he afterwards discarded it in favour of one which he devised himself.

The principal of Holz knecht's instrument is as follows:—A pastille made of some metallic salt, the nature of which is kept a secret by the maker, when exposed to the rays gradually changes its tint. The rest of the apparatus consists of a series of standard tints corre-

sponding to the colours which the pastille will assume after various quantities of the rays have fallen upon it. The standard tints are numbered consecutively, and the dose of X-rays required to impart to the pastille a colour identical with that of any particular standard tint—say, No 5—is known as 5 Holzkecht's units.

He places one of the pastilles upon the spot to be rayed, and makes the exposure until it has assumed the tint indicating the dose which experience has taught to be sufficient to cause satisfactory epilation.

He found that if he exceeded 5 Holzkecht's units at a sitting the result was a more or less severe inflammation followed by a cicatricial alopecia.

I have used this radiometer frequently, and must admit that as an instrument of precision it leaves much to be desired, for the range of tints which can be obtained from the pastille is very limited, and it is, therefore, difficult to decide which standard tint the pastille has reached.

Added to this the pastilles are expensive, and can be obtained from only one source. They can, however, be used a second time, as upon continued exposure to ordinary light they assume their initial tint.

Sabouraud showed that the dose required to cause epilation was about 5 Holzkecht's units, and upon testing our tubes with the radiometer I found that they would take from thirty to forty minutes to develop this dose—a length of exposure which would not be practicable with the number of patients we have to deal with—only one coil also being at my disposal. I, therefore, decided to use shorter exposures, repeated at intervals, instead of the single long one employed by Sabouraud.

Before reading Sabouraud's report I had treated several cases with not altogether satisfactory results. One patient had ringworm pretty generally over one side of his head, but the other side was clear. I, therefore, "rayed" the diseased side until it became quite bald, giving two exposures weekly of ten minutes' duration.

Soon after the fall of the hair, however, from the one side I found that several suspicious-looking spots were to be seen upon the side of the head which I had not treated,

and these, turning out on microscopical examination to contain the fungus, required the treatment to be applied afresh. It was evident to me that this accident of reinfection was one very likely to take place when the loosened hair falls out, for the fungus is not destroyed in any way by the action of the rays, and an infected hair falling upon a healthy area is pretty sure to spread the disease. To avoid this I started using an ointment of salicylic acid, rubbed into the head night and morning, with the idea that it would possibly kill the fungus in the loosened hair, and, certainly, by its greasiness prevent the hair from falling about to the same extent and getting into new areas. This line of treatment I followed for some months with our ringworm cases at the Liverpool Skin Hospital—viz., the administration of two exposures weekly of ten minutes' duration to each diseased spot, and in a very large proportion of cases I found that reinfection took place, though I had a number of cures. I decided, therefore, that for the future where the spots to be treated were more than two or three in number I would remove the hair from the entire head with the rays, and thus avoid any chance of recurrence. I had two masks constructed of fine-meshed wire gauze and covered with lead foil, so that they might be opaque to the rays. One of these was open back and front, so as to expose an area three inches in breadth along the centre of the head from back to front. The other mask had openings at the sides, so arranged that the parts covered by the first mask might be exposed when the second was used, and *vice versa*.

The patients attend upon four days a week for treatment. Upon Mondays and Thursdays the first mask is used, and the back and front of the head each receives ten minutes' exposure. Upon Tuesdays and Fridays the second mask is used, and the sides are exposed in the same way; thus each area receives two exposures weekly of ten minutes' duration. At the end of the third week the scalp begins to show some erythema, and the child complains that it feels sore when the ointment is rubbed in. By the end of the fourth week the hair has usually

completely fallen off, leaving the scalp quite bare and free from fungus. Some children, especially red-haired children, take a little longer than this for some reason, perhaps because red hair is usually a little coarser than other hair, and hence somewhat stronger in the roots and more deeply planted.

Several points about the position of the tube require attention. The anticathode must be placed directly opposite the area to be treated, so that the rays fall perpendicularly on the skin, since any obliquity in their incidents greatly diminishes their therapeutic value.

For the same reason the tube cannot be placed at a distance less than six inches from the skin on account of the obliquity with which the marginal rays then strike. If the tube be placed too close, the hair comes off a circular area directly beneath it of two inches or so in diameter, while the hair around the area is quite fast. Further treatment applied to this spot would produce a dermatitis on the bald area before the hair is removed from the portions surrounding it.

The current which I use is that given by three or four ampères running in the primary of a 12-inch coil, interrupted by a Mackenzie-Davidson mercury motor break—the source of the current being a storage battery of twelve elements giving twenty-four volts.

As regards the tube, I think that a soft one will give the best results, but there is a difficulty in keeping a tube in this condition, running as it has to do for three or four hours consecutively, and I have, therefore, used a tube of from 4 to 6 inches alternate spark length which maintains its vacuum fairly well.

I have noticed in several cases after the falling of the hair that the skin of the scalp has shown signs of a slight folliculitis, this, however, being superficial, has always cleared up in a day or two upon the application of a lotion consisting of—

R. Sulphuris	-	-	-	gr. 20
Hydrargyri et Ammonii Chloridi	-	-	-	gr. 5
Glycerini	-	-	-	3i
Liquoris Calcis, ad	-	-	-	3i.

This folliculitis no doubt is due to the infection of the follicles, from which the hair has fallen out, with pyogenic micrococci, and I do not consider it to be a direct effect of the X-rays.

One might expect that the application of so powerful an agent as the X-rays to the head of a child might lead to some cerebral complications, but it has not been found to be so by any of the workers in this branch who have reported their results up to the present, and none of the children I have treated have ever complained of any symptoms. I have, however, never treated a child of less than four years old.

After treatment has been completed the hair takes about three months to grow again, and the new crop is to all appearances exactly similar to the hair which has been removed.

It has been suggested that this wholesale removal of the hair may have some permanent effect upon its future nutrition. This is a point which is impossible to clear up at present, but there is little reason to suppose that any untoward results will follow.

During my earlier cases an undiscovered defect existed in the secondary circuit of the induction coil, which, though it only slightly impaired the fluorescence upon a platino-cyanide screen, greatly reduced the therapeutic effect. This defect was not discovered until, other repairs being required, the coil was sent to the makers.

Had I been using a milliamperè meter in the secondary circuit I should no doubt have discovered this defect for myself, and I think one should always use this instrument when the X-rays are employed for therapeutic purposes.

In conclusion, it seems probable that in the X-rays we have an agent which, when carefully and judiciously used, will reduce the treatment of ringworm of the scalp from years to months, with the smallest possible trouble and inconvenience both to patient and physician.

ART. IX.—*Dengue Fever*.^a By ALEXANDER HAMMETT MARKS, B.A., M.B., B.Ch., B.A.O., M.D. Univ. Dubl, Brisbane, Queensland, Australia.

WE have in Brisbane, Queensland, Australia, just passed through an epidemic of Dengue Fever which I think is worthy of note, both for its virulence and on account of the small percentage of the population which escaped.

It would be presumptuous on my part to give a general account of this disease, for in this all text-books are agreed. But there have been during this epidemic several particulars in which the disease has differed from the text-books, and these I purpose pointing out.

Sir Patrick Manson gives, I think, the best description of the disease, which, put shortly, is as follows:—

A specific and highly infectious fever peculiar to warm climates, and occurring usually in widespread epidemics.

An attack may be preceded for a few hours by a feeling of malaise or by rheumatic-like twinges in some limb. Frequently, however, it sets in quite suddenly—a patient getting up feeling quite well, but while dressing being attacked and finding it necessary to go back to bed.

Sometimes the fever is ushered in by a feeling of chilliness or even a rigor.

The fever rapidly increases, the head and eyeballs ache excessively, and some limb or joint, or even the whole body, is racked with the peculiar stiff rheumatic-like pains, which are aggravated by moving—the loins in particular becoming the seat of great discomfort, amounting in many cases to actual pain.

The skin and mucous membranes become flushed and reddened, causing what is known as the primary eruption.

These symptoms in severe cases become intensified till the patient is prostrated, his temperature rising to 103° F, and even to 105° and 106° F., and he is unable to move on account of the headache and pains.

Gastric symptoms may set in and vomiting occur. The tongue, at first moist and creamy, becomes dry and yellow.

^a A Thesis read for the Degree of Doctor of Medicine in the University of Dublin, July, 1905.

The patient may continue so for three or four days, the fever decreasing slightly after the first day. In most cases the first stage is abruptly terminated about the end of the second day by crisis of diaphoresis, diarrhœa, diuresis, or epistaxis.

Then the second stage comes with the temperature normal, and the patient feeling fairly well, except for slight twinges of pain.

This state of comparative health continues to the fourth, fifth, or sixth, or even seventh day from the commencement of the illness. Then there is a rise in the temperature, slight in many cases, and usually of short duration.

With the recurrence of the fever a rash of roseolar type appears, the pains return, but pass off more quickly, and are followed in some cases by a furfuraceous desquamation.

Such is a brief *résumé* of Manson's description, and it appears to me that if I point out in what way the present epidemic has differed from, or in some points followed, this account my thesis would be of most interest.

First, as to the percentage of persons attacked. I have during the last two months had charge of the police stationed in the city and suburbs. There are 263 men in the district, and 209 have been attacked, giving a percentage of 75.66. This percentage is probably slightly under-estimated, as others may have had the malady mildly, and so may not have reported themselves sick. Eleven men were attacked twice, showing that one attack does not confer any certain immunity during the same epidemic.

Here it is interesting, and rather surprising, to note the comparative immunity of the prisoners undergoing sentences in His Majesty's gaols. There have been in the prisons situated in Brisbane an average for the last two months of 154.9 men and 40 women. Of these 32 men and 29 women have been attacked, giving relative percentages of 20.65 for the men and 72.5 for the women. One woman was attacked twice.

But more surprising still are the figures from the Penal

Establishment, situated on an island in Moreton Bay. There are 195 prisoners, and only 5 have been attacked, giving a percentage of 2.53, while in both institutions the warders have fared as badly as the general public.

It might be urged in explanation of these figures that the prisoners have not been in close contact with affected persons, but this is not true as far as the prisoners who wait on the warders are concerned, and besides there have been five cases among ten persons, the wives and children of some of the officials, who have not come in close contact with people from the city.

Continuing with the description of the disease, the pains complained of principally have been:—

Headache and pain in the eyes and pain in the loins. This—the pain in the loins—is, I think, the most prominent feature, and has been intense in some cases—one policeman being attacked, while on duty, with all the symptoms of renal colic. Another position in which pain was frequently located was over the heart, I believe in the intercostal muscles.

During this epidemic the gastric disturbance has been very prominent—the vomiting being severe, and lasting for two or three days, while the feeling of nausea has been most distressing.

In some few cases purging has occurred, but generally there was a tendency to constipation, especially among children.

Epistaxis in children has been common and the patient has improved afterwards.

The rash has not followed closely the usual description, the primary rash being very marked, and in appearance like a scarlatina rash. The secondary rash has not been as marked or of as distinct a roseolar type as described. It has in some cases appeared on the forehead and arms like purpuric spots in appearance, but which have disappeared on pressure.

Desquamation has not been common, but the pruritus has, in many cases, been a distressing symptom.

In Manson's description he makes no mention of a recurrence taking place about ten to twelve days from the

commencement of the disease, but this has been frequent, and the patient has gone through a second, though in most cases a milder, attack.

There has been one symptom in this epidemic which has been of great importance—namely, the swelling of the glands, principally the inguinal, which have been very painful.

We had during January, February, and March several cases of bubonic plague, and the occurrence of cases which have set in with acute fever, accompanied with swollen and painful glands in the inguinal regions, has made the diagnosis between plague and dengue fever in some cases extremely difficult.

I have, as Government Medical Officer, had to perform *post-mortem* examinations on two cases of supposed plague which I believe were cases of dengue fever with enlarged glands. They were both in children, one aged twelve and the other six and a half years.

In both cases the most marked feature was the congestion of the brain, and in both cases the mesenteric and inguinal glands were enlarged, though no ulceration or inflammation could be found in the intestine.

Among other *post-mortem* examinations I have had several on persons who had recently suffered from dengue fever, and there have been some points in common which I think are probably due to the fever.

Among the number are two in which the cause of death was hæmorrhage at the base of the brain, five in which the cause was heart-failure, and four cases of suicide.

The pia mater in four cases was thickened and opaque, and the quantity of cerebro-spinal fluid greatly increased.

In several cases the blood has been markedly fluid, the spleen has been enlarged, and in three cases in particular to about three times its normal size.

Another point that has caused some popular alarm, and which I have not seen mentioned in text-books, is "sleepiness." The text-books all agree that sleeplessness during and after the disease is common, and we have experienced many such cases. But there have been some which have gone to the other extreme, and have slept the attack away,

remaining in a drowsy condition for two or three days, while others have had crisis by sleep and wakened up, feeling, except for the weakness, quite well.

There have been a few cases where a coma, like renal coma, with twitchings of the muscles of the face and limbs—approaching in one case which I saw to almost tetanic spasms—have set in, and in several cases ended fatally.

The mortality in uncomplicated cases has been low, but has, I think, shown an increase on the former epidemic which occurred in 1897-98. Children and old people have suffered most, and, as far as they are concerned, it is far from being the benign disease the text-books would have us consider it.

The last point I would wish to lay stress on is the extreme mental depression which follows on the fever. This has been most marked, and has led to several suicides and to cases of melancholia sufficiently severe to require asylum treatment. It is my opinion that in the next few months we shall hear of many mental and nervous cases which have followed in the wake of this fever.

ORIGIN OF AROMATIC BODIES IN THE URINE.

THE general opinion to-day is that most of the aromatic bodies commonly encountered in the urine (indican, skatol, and phenol) are a result of bacterial decomposition in the intestines, and many authors go so far as to say that without the latter there can be no indicanuria. It is, therefore, interesting to note that K. Lewin (*Wien. klin. Therap. Woch.*, May 21, 1905) has succeeded in obtaining phenol by the autodigestion of tissues *in vitro*, where bacterial activity could be absolutely excluded. If rabbits are poisoned with large doses of phloridzin, so that an active breaking down of proteid tissue is brought about, enormous amounts of phenol and indican will appear in the urine. The urine of patients suffering from carcinoma will often show an excess of indican, but only if cachexia has been present. The indican here is very obviously derived from the decomposed proteid tissue and not from bacterial activity.—*Medical News*, New York, Saturday, July 15, 1905.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by SIR JOHN BATTY TUBE, M.D., and D. NOËL PATON, M.D. Vol. IX. Edinburgh: Oliver & Boyd. 1905.

IN the present volume are reprinted the papers which contain a record of the work done in the laboratory since 1902. They are numerous, and for the most part of great interest, and show that the usefulness of the institution is still unimpaired, and that its resources are still widely availed of by those engaged in original research.

The first group of papers treats of the physiology and pathology of the ductless glands. The expenses of these investigations have been defrayed by Mr. Francis Mason. The physiological papers—twelve in number—are divided into three sections, dealing respectively with the spleen, supra-renal, and thymus. Most of them have been already published in the *Journal of Physiology*, the remainder in other journals. In the work Dr. Noël Paton has taken the chief part.

The first paper is by him and Dr. A. Goodall on the spleen in relationship to the process of hæmolysis. The result at which they arrive is that "there is no evidence that the spleen has any active hæmolytic function. It is rather a scavenger of the blood, removing dead erythrocytes, breaking down the hæmoglobin, and retaining the iron for use in the regeneration of the blood cells."

The same authors, in a second paper, find that "simultaneous removal of the thymus and spleen in the young guineapig in no way interferes with nutrition, blood formation, growth and development of the animal."

In the third paper the same writers, in conjunction with G. L. Gulland, study the leucocytosis which occurs

during digestion. They find that it reaches its maximum about the fourth hour; that it is not affected by removal of the spleen; that the increase of white cells is due (a) to a lymphocytosis very constant in its incidence and degree; (b) in most cases to a polymorphonuclear leucocytosis much more variable in degree, while there is but little change in the eosinophil cells; that the conclusions of Hofmeister and Pohl, which place the seat of the increased formation of leucocytes in the intestinal wall, cannot be maintained, because the number and varieties of white cells are the same in the mesenteric arteries and corresponding veins and in the general circulation, and because there is no evidence of increased activity in the lymphoid tissue of the intestinal walls.

Of the adrenal papers the first is by Dr. Noël Paton on the Nature of Adrenal Glycosuria, The substance employed was the adrenal chloride 1 in 1,000 of Takamine supplied by Parke, Davis & Co. The animals used in the research were rabbits and dogs. The conclusions arrived at are as follow:—

“The subcutaneous administration of adrenalin in dogs and rabbits causes a true glycosuria and glycaemia, the degree of which depends largely upon the amount of carbohydrate in the body, but which occur when stored carbohydrates have been eliminated. The glycosuria is apparently due to a diminished utilisation of sugar in the tissues since it is not due to a mere increased formation of glucose or to increased excretion of sugar by the kidneys.

“That the effect is due to a toxic action of the adrenalin, and that it is not caused by an interference with the processes of oxidation due to the vascular changes is indicated, first by the extent of the glycosuria, which is far more marked than that observed as the result of mere interference with oxidation, and, secondly, by the fact that the glycosuria is slight in guineapigs where the vascular changes are much more prominent.

“The observations of Herter support the view that the toxic action is not a direct one, but that it operates through the pancreas.

"During the prolonged daily administration of adrenalin days may occur on which sugar does not appear in the urine.

"A distinct tolerance of the drug is established.

"Diacetic acid and acetone have not been detected in the urine of dogs, but a dark red ring at the junction of the urine with nitric acid is constantly present. The study of the proteid metabolism shows—(1) That the sugar is not entirely derived from the breaking down of proteids; (2) that there is a markedly increased production of ammonia; and (3) that, on an insufficient diet, the decomposition of proteids is markedly increased, while the absorption of proteids is not interfered with. The proteid metabolism under adrenalin thus behaves as it does in ordinary diabetes."

Dr. W. B. Drummond gives, in the next paper, the results of his examination of the histological changes produced by the administration of adrenalin. He finds congestion and hæmorrhages with serous effusions in the viscera. Death is usually due to asphyxia, and in the lungs, in addition to the congestion, distinct signs of inflammation are found, due, it is believed, directly to the toxic action of the drug. The results lead the author to agree with Brodie that in cases of hæmoptysis in man adrenalin is strongly contra-indicated. The toxic action of adrenalin is most markedly exerted on the glandular organs, particularly the liver and kidney. It acts as a protoplasmic poison, exerting its action in the liver chiefly on the cells of the central zone of the lobules, in the kidneys on the cells of the convoluted tubes. The diminution of urea nitrogen observed by Paton may be due to the alterations in the liver.

This paper is followed by one on the influence of adrenalin poisoning on the liver, with special reference to the glycogen, by Drs. Drummond and Paton. In this it is shown that "(1) in acute adrenalin poisoning, if the animal does not die too rapidly, the glycogen in the liver is diminished in amount; (2) in chronic adrenalin poisoning the amount of glycogen in the liver is not necessarily altered; (3) in acute adrenalin poisoning degenerative

changes are frequently present in the cells of the central zones of the lobules."

Dr. Noël Paton next records the effects on sugar and nitrogen excretion, which he has found to follow the administration of adrenalin to birds. He concludes—"(1) Adrenalin, when administered subcutaneously, causes glycosuria in birds as in mammals; (2) it does not act through the pancreas; (3) it causes a decrease in the proportion of nitrogen elaborated into uric acid, an increase of the nitrogen in ammonia, and probably an increase in the nitrogen in urea."

The effect of removal of the pancreas in ducks is interesting. No glycosuria was caused by the extirpation of the gland, but in animals so operated on adrenalin caused the appearance of sugar in the urine.

"The fact that while the islands of Langerhans are well developed, in the duck the pancreas plays no important part in regulating the metabolism of sugar throws doubt upon the theory that the function of these structures, even in mammals, is to regulate the carbohydrate metabolism."

Dr. Paton has tried the effect of the administration of adrenalin and of thyroid extract on human diabetics. Adrenalin, even in very small doses, was found to act on the diabetic as it does on the healthy animal—it increased the sugar and the proteid waste. Thyroid extract caused symptoms of thyroidism and threatening of diabetic coma, and had to be given up. It is clear that neither drug can be used in the treatment of diabetes.

The third series of researches carried out by the aid of the Mason fund deals with the thymus gland, and show a close connection between it and the sexual organs.

In the first paper Drs. Goodall and Paton arrive at the following conclusions:—

"In guineapigs the thymus continues to increase in size until the animal reaches a weight of about 300 grams., or an age of about two months—i.e., at about the time when the animal becomes capable of reproduction, and after that time it begins to degenerate.

"2. Removal of the thymus, even on the day of birth, has no influence on the growth of the animal.

"3. Removal of the thymus causes no change in the number or character of the erythrocytes, but is accompanied by a decrease in the number of leucocytes, which, in the animals observed by us, lasted about two months. All varieties of leucocytes took part in this decrease.

"4. Thymusless animals which became pregnant showed a normal leucocytosis.

"5. Thymusless animals infected with tubercle showed the same increase or altered proportion of leucocytes as is manifested by animals with the gland intact.

"6. The injection of terebene caused a leucocytosis in thymusless as in normal animals.

"7. The injections of broth cultures of staphylococci and streptococci did not usually cause the marked leucocytosis in thymusless animals which it produced in normal guineapigs.

"8. The resistance to the toxins of staphylococci and streptococci is diminished by removal of the thymus.

"9. Removal of the thymus was not found to have an effect on the resistance of the animal to diphtheria toxin."

Mr. J. Henderson, from a study of the effect of castration on the thymus, finds:—

"1. That castration in cattle causes a persistent growth and a retarded atrophy of the thymus gland.

"2. That castration has a similar effect in guineapigs and rabbits.

"3. That in bulls and unspayed heifers the normal atrophy of the thymus, which begins after the period of puberty, is accelerated when the bulls have been used for breeding and when the heifers have been pregnant for several months."

Dr. Noël Paton made complementary experiments, studying the effects on the growth of the sexual organs produced by the removal of the thymus. He finds that removal of the thymus in guineapigs below 300 grams., the weight at which the gland normally atrophies, is followed by a more rapid growth of the testes, so that there is "a reciprocal action between thymus and testes, each checking the growth of the other." In female guineapigs it was found that pregnancy occurred at

approximately the same time in animals with and without the thymus.

Dr. Goodall, studying the histological changes in the thymus after birth, and the effects on them of castration, finds that Hassall's capsules are derived from masses of squamous epithelium embedded in adenoid tissue, by which portions of epithelium are cut off and degenerate into the well-known concentric corpuscles. Castration delays the fatty inversion of the adenoid tissue and the disintegration of the epithelial masses.

Two papers follow on the pathology of the ductless glands. The first is by Drs. Gulland and Goodall, and gives a histological study of seventeen cases of pernicious anæmia. This work is a valuable contribution to the knowledge of this mysterious disease. It is shown that the essential feature is a megaloblastic anæmia with abnormal vulnerability of the blood cells; that in some part of the body (but, except in bothriocephalus anæmia, probably not in the intestine) a toxin is produced which acts directly on the bone marrow interfering with normoblastic blood formation, leading to megaloblastic formation, and acting with negative chemiotaxis upon leucocytes, especially of the neutrophil variety. The megaloblastic cells so produced are readily destroyed by endothelial cells and leucocytes in the hæmolytic organs, hæmolymph glands, spleen, and marrow. There may be a predisposition to the disease, due to a congenital defect in the marrow, as the disease represents a reversion to the foetal type. The accumulation of iron in the liver is not peculiar to pernicious anæmia, but is the normal result of the abnormal amount of blood destruction.

The second pathological paper is a contribution to the histology and genealogy of hæmophilia by Dr. Goodall. The conclusions are:—

“1. Hereditary transmission is a striking feature in nearly every case. 2. Although hæmophilia is more common in males, it is not so infrequent in females as is generally stated. 3. A large proportion of the more recently recorded cases have been transmitted through the male line. 4. The condition is not due to any

anatomical peculiarity of the vessels or tissues demonstrable by present methods. 5. The essential pathology seems to consist in a greatly delayed coagulability of the blood which progresses with progressing anæmia. 6. There is reason to believe that calcium chloride may be of service, but its use is likely to be limited in severe cases by the irritability of the stomach and its nauseous taste."

We have, unfortunately, left ourselves no space for the remaining thirteen papers contained in this volume. They deal with various subjects of physiological, pathological, and pharmacological interest, and are all deserving of careful study. We must, however, bring our notice to a close, but would not do so without expressing our congratulations to the editors on the large and valuable contributions to science which are contained in each successive volume of their Reports.

Anæsthetic Difficulties, and how to Combat them. By A. DE PRENDERVILLE, M.R.C.S.; Senior Anæsthetist to the Tottenham Hospital. London: Henry J. Glaisher. 1905. Pp. 16.

THE author tells us that this paper was originally read before the North-East London Clinical Society, and, like many other papers of similar origin, it shows signs of hasty composition, with little or no subsequent revision. When one meets with such expressions as "pilling the patient," "the burly satellite of Bung," or a description of the tongue as "an ugly customer," one feels in doubt whether it is a scientific paper or an article from an evening newspaper that one is reading.

The subject of the difficulties which may occur during the administration of the various anæsthetic agents is surely one of sufficient importance to be treated seriously, yet it is not easy to believe that an author, who uses the language which we find in the pamphlet before us, is treating the subject seriously. After much careful investigation of this curious language, however, we were able to find some observations which would be of use to the young anæsthetist. We are fully in agreement with

our author in his opinion that ether, or the nitrous oxide and ether sequence, should always be selected as the routine anæsthetic agent for the induction of general narcosis. The difficulties in the way of its successful administration render necessary that careful and constant observation of the phenomena of the narcosis, the absence of which constitutes the gravest danger to the patient.

Epilepsy and its Treatment. By. W. P. SPRATLING, M.D., Medical Superintendent of the Craig Colony for Epileptics, &c. Philadelphia, New York, London: W. B. Saunders. 1904. Large 8vo. Pp. 522.

THERE is no doubt that this is a very comprehensive book, and that its author has *schrecklich viel gelesen*, yet while we must admire the extent of his learning, we cannot but say that he has occasionally credited his readers with a greed for information that is rare. Some of the lists of synonyms, for example, might be dispensed with, and sentences like the following are perilously close to "book-making":—"In the last form we employ a derivative from the Greek, $\psi\upsilon\chi\iota\kappa\acute{o}s$ ($\psi\upsilon\chi\acute{\eta}$, soul, mind), meaning psychic or psychical, its further meaning being 'of or pertaining to the mind or soul; mental as distinguished from physical and physiologic.'"

It is a pity for medical writers that there is such a thing as grammar; its rules are hard and irksome, but, unless we are to return to the condition of those unhappy labourers on the plains of Shinar, we must make some attempt at uniformity of vocabulary at least. Yet our author uses "back of" as a synonym for "behind," without provocation as it seems to us, for the new word is neither shorter, prettier, more expressive, or more convenient than the old.

Dr. Spratling quotes Learcey as to the increase of epilepsy, as well as of insanity, among the American negroes since their emancipation, and expresses a strong opinion of his own as to the lesson to be derived from the degeneration of that race mentally and physically when they ceased to be under control. There seems to be no

doubt that to rear a race, whether of men or animals, for sale for purposes of physical labour is the best method of securing a healthy strain. Freedom means the prevalence of drink, prostitution, idleness, and every form of irregularity; and liberty at best means an entry into the race for wealth which is ever agitating to the mind, and often ruinous to the body.

Discussing indirect hereditary influences in the production of epilepsy, he brings out the curious fact that alcoholism is of more importance than insanity.

The interesting observation is recorded that, notes being kept of the times at which seizures occurred, it was found that the individual hour at which the greatest number took place was "3 a.m., the time at which the vitality of the body reaches its lowest ebb." It is, of course, an old observation that suicide is most apt to occur in the "wee sma' hours ayont the twal," while the recent investigations of W. C. Sullivan on the recurrent tendencies to suicide among drunkards point to a curious analogy between such tendencies and epileptic conditions.

The entire work before us contains a vast amount of information, condensed considering the extent of the subject, and put clearly and fairly. Indeed, the author's fairness is sometimes so extreme as to be irritating, when he lays several views before us without much indication to which he himself inclines.

In a special chapter on pathology, by Drs. T. P. Prout and L. Pierce Clark, we are told that "the conclusion seems warranted that epilepsy is a disease-state of the sensory elements of the cortex, and that the impulses constituting the discharge phenomena are peculiar to such disease-states, and are transmitted over other than the ordinary motor paths. The elements of the cortex most seriously involved are certain sensory cells of the second cortical layer, some of which are destroyed during the epileptic process." This conclusion is founded partly on the experiments of Prus, who found that spasms could be produced though the pyramidal tracts were severed, and could not be produced when everything in the peduncles was severed except the pyramidal and frontal

tracts; partly on the fact that the most striking microscopic changes presented by the cortex of the epileptic are found in the cells of the second cortical layer.

With respect to treatment the careful observations of the Craig Colony have added little that is favourable. The author has found Flechsig's method of treatment with morphin and bromide of little use, and he seems to re-echo the almost uniformly unfavourable verdict of those who have tried it. He does not seem inclined to endorse the high opinion some entertain of borax in this disease. The results of his experiments in relief of eye strain in epilepsy were not encouraging, and he tells us that he is unable to recall a case of epilepsy in which he felt that defective ocular conditions alone caused the disease. That such conditions are very often associated with epilepsy the statistics which he quotes seem to clearly prove. With regard to trephining, Dr. Spratling recognises the difficulty of summing up the general result, but he very fairly details, as illustrative of its value, the history of thirty-four cases in which trephining was tried on patients at the Craig Colony. In one case only was there apparent recovery, but it is more than doubtful how far this was due to antecedent trephining. In twenty-one there was no improvement; in nine the attacks were favourably modified to some extent; in three the disease was much worse. The remarks about operations on epileptic women for the removal of the reproductive organs are eminently judicial. The author would adopt this procedure only in carefully selected cases, and where there are clear indications. Even so, the results of his own cases are not very encouraging. Among nine cases one died from the operation; one was disimproved; in two the fits were reduced in frequency; in five the general physical condition was improved, but the fits were apparently unaffected.

Interesting chapters on the "Psychological Aspects of Epilepsy" and on "The Medico-Legal Aspects of Epilepsy" close the book. The former is carefully worked out. The latter contains some instructive cases, from which we gather that the same stupid muddling,

tee-totum spinning for a verdict, and subsequent trial by newspaper, reign in American as in English proceedings when the question of responsibility is raised.

On the Relation of the Parasitic Protozoa to each other and to Human Disease. By E. J. McWEENEY, M.A., M.D., D.P.H., F.R.C.P.I.; Professor of Pathology, C. U. Medical School, Dublin; Bacteriologist to the Local Government Board for Ireland; Pathologist to the Mater Misericordiæ Hospital, Dublin. London: The Bedford Press. 1905.

THIS is an address delivered before the Epidemiological Society of London, and consists of a short account of some of the recent advances in our knowledge of the parasitic protozoa. It deals chiefly with the recent researches (more particularly with those of Schaudinn) on *Amœba coli* and *Plasmodium vivax*, but the most important part of the address is that which is devoted to a consideration of Schaudinn's recent papers on the development of *Trypanosoma noctuæ* (*Halteridium*) and *Leucocytozoon* (both of which occur in the blood of the barn owl) in their common intermediate host *Culex pipiens*. Schaudinn finds that both these organisms develop into trypanosome-like bodies, and, further, that the trypanosome-like bodies which develop from *Leucocytozoon* become very small by division, but subsequently increase greatly in length and become spirally twisted on their long axis, so as to constitute what has hitherto been known as *Spirochætes*. These observations of Schaudinn tend to establish a connection between malarial parasites, trypanosomes, and spirochætes, which have up to the present been considered to belong to entirely separate classes, but they are not yet confirmed, and have indeed been entirely denied by Noy and M'Neal. Our knowledge of parasitic protozoa has received so many additions in recent years that it becomes rather difficult for many of those who are interested to follow its progress, and even the necessarily brief account which Professor McWeeney gives will no doubt be useful to those who find a difficulty in obtaining access to the literature of the subject.

PART III.

SPECIAL REPORTS.

REPORT ON PUBLIC HEALTH.^a

By SIR CHARLES A. CAMERON, C.B., M.D.; D.P.H., Camb.; M. and Hon. F.R.C.P.I.; F.R.C.S.I.; F.I.C.; Ex-President, Hon. Dipl. Public Health, and Professor of Hygiene and Chemistry, R.C.S.I.; Vice-President and Ex-President of the Royal Institute of Public Health, and of the Society of Public Analysts; Medical Officer of Health for Dublin; Hon. Member of the Hygienic Societies of France, Belgium, Paris, and Bordeaux, the Academy of Medicine, Sweden, and of the State Medical Society of California, &c.; Examiner in Sanitary Science, Royal University of Ireland; Member of the Army Sanitary Committee, Harben Gold Medallist, 1903, &c.

VITAL STATISTICS OF ENGLAND AND IRELAND COMPARED.

DURING many centuries the increase of population in England was very slow. Was this slow development due to war? I think not—at least to any important extent. It seems to have been chiefly due to insanitary conditions, mostly affecting urban populations. Our information as regards the populations of European countries in the Middle Ages is not accurate, but we are certain that, as compared with those of the present day, they were small.

Dr. Malthus states that population unrestrained should double itself in twenty-five years, but, assuming that it even required fifty years to double the population, Europe would now have an enormously larger population, even making allowance for its losses by emigration. At the time of its collapse the Roman Empire in Europe had a considerable population, but notwithstanding the in-

^a The author of this Report will be glad to receive any books, pamphlets or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of the Journal.

trusion of hordes of invaders from the east and north, the population of the countries in Southern and Western Europe, which had formed parts of the Roman Empire, remained for centuries without any substantial increases in their population. Dealing only with our own countries, the condition of the people, both in the towns and rural districts, but especially the former, was very unfavourable to longevity. In the country many lived in wretched dwellings, situated on marshy and ill-drained lands, and in woods. Their food was coarse, and, owing to their unskilful treatment of the soil, famine was not infrequent. In the towns things were worse; there was great concentration of the people, generally owing to the towns being surrounded by walls or ramparts which unduly curtailed the limits of the urban area. Unpaved streets, seldom cleaned, water derived from town wells, which were generally situated close to the cesspools. These and other insanitary conditions, such as intra-mural burials, kept the town population from that rapid increase characteristic of the happier days we live in.

Amidst the general neglect to systematically record the births, marriages, and deaths in the Middle Ages and in later times, one example to the contrary is afforded by the City of Geneva. So early as 1549 the methodical registrations of vital statistics commenced in that city. The study of its registries shows that in the second half of the sixteenth century the mean duration of life in Geneva was only 8 years, 7 months, and 26 days. As the population increased, though slowly, the immigration into the city must have been very large, for otherwise the population would have become extinct. A city, however, which recognised the value of vital statistics must have taken measures for the improvement of the public health. At all events, it is recorded that the mean duration of life rose in the seventeenth century to 13 years, 3 months, and 16 days; in the first half of the eighteenth century to 27 years, 9 months, and 13 days; and in the second half to 31 years, 3 months, and 5 days. In the period 1814-1833 the mean expectation of life was 45 years and

29 days. There was a high birth-rate in the city in earlier years, but the infantile mortality was enormous.

A high death-rate continued in English towns until the last century. In the seventeenth century the city "bills of mortality" show that the deaths were generally about 40 per 1,000 persons living. Three-fourths of the children died before they passed the fifth year of their brief existence. Towards the close of the century about one-half perished before they passed their first year, or about double the present rate. The parish records of other English towns show equally appalling death-rates.

At all times during the Middle Ages plagues and pestilence were raging in some parts of Europe. In London in 1665 one-fifth of the population—at that time half a million—perished from the plague.

In Dublin plagues and fevers decimated the population, and, as in the case of London, the deaths greatly exceeded the births.

As an illustration of the slow increase of population I may mention that the population of England and Wales in the reign of Queen Elizabeth was estimated at five millions. In 1665 it had increased, as estimated, to 6,450,000. 136 years later (1801) it had not doubled, the increase being only 3,450,000. Since that year the population has quadrupled.

In the reign of Queen Elizabeth began the great immigration of people from the rural into the urban districts, which has continued and steadily increased up to the present. In 1901 only two-thirds of the people in Dublin were born in the city and county.

Notwithstanding the great increase of the urban population, its death-rate has largely decreased during the last fifty years.

In all England and Wales the death-rate in the period 1848-1872 was 23.45 per 1,000 persons living in the case of males and 21.42 in the case of females.

In Glasgow in 1871-2 the deaths were in the ratio of 30.7 per 1,000 of the population. Ten years later the ratio declined to 25.2. In 1899-1901 the ratio had fallen to 20.7, or two-thirds of that of 1871-2.

Dr. Chalmers, Medical Officer of Health for Glasgow, attributes the great reduction in the "bills of mortality" of that city to the sanitary improvements effected in large districts, but where no improvements have been made a high rate of mortality still prevails.

In 1871 the death-rate in Brownfield (population 4,000) was 38 per 1,000; in 1901 it was 36.

In Cowcaddens (population 78,000) the rate in 1871 was 33. Thirty years later it was still 33.

The following Table shows the improvement in the state of the public health in England and Wales since 1841:—

RATIOS PER 1,000 PERSONS LIVING.

Period.		Births.	Marriages.	Deaths.
1841-1850	...	32.6	16.1	22.4
1851-1860	...	31.4	16.9	22.2
1861-1870	...	35.2	16.6	22.5
1871-1880	...	35.4	16.2	21.4
1881-1890	...	32.5	14.9	21.4
1891-1900	...	29.9	15.6	18.2

In 1902 the death-rate was 16.23, the lowest on record. In 1904 the death-rate was 16.2, the zymotic death-rate 1.94, and the birth-rate 29.1.

Before the passing of the Public Health Act of 1875, and the Registration of Births, Deaths, &c., Act of 1880, many deaths were not registered, so that the death-rates before 1875 were really greater than are shown in the Table.

Formerly the death-rates in the towns were very much higher than those in rural districts—in some towns they were twice that of rural districts. The wide gulf between the urban and rural rates is steadily becoming narrower and narrower.

The mean death-rate in the English and Welsh counties, in which there are numerous and large towns, was 19.498 in the quinquennial period, 1897-1901, and 17.786 in the year 1902. In corresponding periods in the counties mainly rural the rates were 14.457 and 13.678.

The urban death-rate is now lower than the rural

death-rate was in the early part of the last century. The decrease in the rate of all England and Wales is the more striking from the fact that the urban population is increasing so rapidly. Fifty years ago about 36 per cent. of the population was rural; now it is only about 24 per cent.

Russia, with a population four times greater than that of England and Wales, has a smaller urban population.

The urban death-rate is declining faster than the rural death-rate, owing to increased after-expectation of life at ages other than that of infants. In the towns the infantile death-rate has shown less decline than in the case of country infants. In 1851-60 the mean expectation of life at 5 years old was 50.2 years for males and 50.9 for females. In the period 1881-1890 the mean expectation of life for males aged 5 was 52.7 years and for females 54.7 years.

The vital statistics for London are most interesting, for they prove that even when an enormous concentration of population takes place hygienic measures can still ensure a fair measure of life.

During the sixteenth century the proportion of deaths to the population was believed to be about 50 per 1,000. In the latter part of the seventeenth century it was at times 80 per 1,000. In the year of the great plague nearly one-fifth of the population, then estimated at half a million, perished. Coming to more recent times we find that the death-rate in the period 1861-1870 was 26.55 for males and 22.24 for females.

In 1903 the death-rate in the administrative county of London, with an estimated population of 4,613,812, was 15.2, the lowest on record. In 1904 the death-rate was 16.10, or corrected for age and sex distribution 17. The birth-rate was 28.

Dealing with Manchester, we find that its death-rate in the decennial period 1861-1870 was 35.38 for males and 30.46 for females. In 1903 the rate was 19.7.

Liverpool, which in 1861-70 had a death-rate of 40.97 for males and 36.36 for females, had a general rate of 20.5 in 1903, and 21.9, or corrected 23.4, in 1904.

In 1904 the following were the death, zymotic, and birth-rates in England and Wales:—

	Births	Deaths	Chief Zymotic Diseases
England and Wales ...	27.9	16.2	1.94
Rural England and Wales ...	26.8	15.3	1.28
76 Largest Towns ...	29.1	17.2	2.49
142 Smaller Towns ...	27.5	15.6	2.02

There are in England and Wales 76 towns, each containing more than 50,000 inhabitants. They include a population of 15,271,287 in 1904. In that year the birth-rate was 29.1 per 1,000; death-rate 17.2; zymotic death-rate 2.49.

The deaths of infants under one year old was at the ratio of 160 per 1,000 births.

The lowest rates were in Hornsey—the figures being remarkable—namely, birth-rate 19.9; death-rate 8.4; zymotic death-rate 0.9; and infantile death-rate 87. The town had 81,221 population.

In 18 towns the death-rate was under 14.

The highest death-rate was in Liverpool—namely, 22.6. The zymotic death-rate was 4.65; and infantile death-rate 196. The birth-rate was high—33.7. The population was estimated at 723,430.

Only three other towns had death-rates over 21—namely, Manchester, 21.3; Salford, 21.2; and Wigan, 32.2.

It will be seen that there has been a considerable reduction in the death-rate in England and Wales since the period 1861-70. It is significant that during the next and following decades Acts of Parliament relating to sanitation were passed in great numbers, and in most of them the word “shall” instead of “may” appeared. Acts of Parliament which enact that so-and-so may be done are generally ineffective, but when local authorities are directed that they shall do so-and-so there the Acts become really operative. It is at least certain that since the passing of the great Public Health Act of 1872 the state of public health in the English towns has greatly improved.

There are influences affecting the death-rate which,

apart from the sanitary measures, must be considered. Since 1871-1880 the birth-rate in England has been declining. During that period it was 35.4. In the ten years ended in 1901 it had decreased to 29.9, or about one-fifth. In 1904 it had further declined to 27.9, or 7.5 below the figure for 1871-1880. As about one-fourth of the children born die before they pass the fifth year of life, the fewer children in a community the lower will be the death-rate, *cæteris paribus*, compared with a community in which there was a larger proportion of children under five years. I have no doubt but that the death-rate in England would not have fallen quite so low since 1880 if the birth-rate had not also fallen. Still I think that the diminished birth-rate only partly accounts for the reduced mortality of late years.

It has been alleged that the preservation of the lives of weakly infants and of delicate young persons by the increased and more intelligent attention given to them must reduce the mean expectation of life in the case of the adult population. The lives so preserved cannot as a class exist so long as those of adults who had always been strong and healthy. I do not think this factor is so important as that of diminished births. That able vital statistician, Dr. Arthur Newsholme, has shown that whilst the mean expectation of life at the age of five years was for boys 50.2 years in 1851-60, it was 52.7 years in 1881-1890.

I now come to deal with our own country.

There are records showing that before the nineteenth century there was a very high rate of mortality in Irish towns. The records in the church registers of Dublin show that in the seventeenth and eighteenth centuries the births were greatly exceeded by the deaths. It was only by immigrants from the country that the town populations were preserved from extinction.

Until 1864 there was no systematic registration of births and deaths in Ireland. Even after that year and until the passing of the Public Health Act of 1875 and the Registration of Births and Deaths Act of 1890 registration was defective.

The birth-rate in 1864 was 24.1, in 1865, 25.7, and in 1866, 26.2. In the same years the death-rate was 16.6, 16.6, and 16.8. In 1866 the zymotic death-rate was 1.1.

In 1866 in the urban districts the birth-rate was 29.1, the death-rate 23.8, and the zymotic death-rate 2.1. The rural birth-rate was 20.2, the death-rate 15.1, and the zymotic death-rate 0.8.

In the period 1879-1883 the mean annual death-rate was 18.8. In the period 1878-1887 the birth-rate was 24.2. During nine years of this period there was more accurate registration.

Coming to later periods, in the decennium ended in 1903 the birth-rate was 23.1, and in the decade 1893-1902 the death-rate was 18.1, in 1903 it was 17.5.

As compared with England, Ireland has a low birth-rate, partly due to the large proportion of the population living in the rural districts. The rate has not substantially declined, contrary to the case in England.

The death-rate is in excess as compared with England, notwithstanding that so small a proportion of the people live in towns. Even allowing for defective registration before 1875, there is no marked reduction in the death-rate.

BIRTH-RATE AND DEATH-RATE IN LARGEST TOWNS.

In 1881-1884 the urban birth-rate was 29.24, the death-rate 26.46 and the zymotic death-rate 3.08.

Period 1887-1891.—Birth-rate 29.0; death-rate 24.9; zymotic death-rate, 2.74.

VITAL STATISTICS OF DUBLIN.

Previous to 1879 the registration of deaths in Dublin was very defective. In that year the Public Health Act of 1878 came into force. Its section 131 provides that the Registrars and Secretaries of Burial Boards and Cemeteries Companies should make, and be paid for, full returns in reference to the persons interred in their burial

grounds. Owing to this Act and an Act relating to births and deaths passed in 1880, registration of these events has become very accurate since 1879. It was noted before this year that the burials in the principal metropolitan cemeteries exceeded the registered deaths by 9.8 per cent. As in the period 1894-1903, the registered deaths exceed the burials in these cemeteries to the extent of 1,397 annually, it is evident that before 1879 more than 10 per cent. of the deaths were not registered. In the following statements I have added 10 per cent. to the recorded death-rates up to 1879.

The Registrar-General of England publishes two death-rates—"crude" and "corrected." The mean expectation of life is greater with females than with males, and at different ages there are different mean expectations of life duration. It is evident then that a town with a great preponderance of females and of persons of most viable ages would have a lower death-rate than one equally salubrious, but with the above-mentioned conditions reversed. The Registrar-General determines the death-rate of both sexes, and at all ages, in all England and Wales, and then makes corrections of the crude death-rates or numbers of deaths in the urban and rural districts. As the towns, on the whole, contain a larger proportion of persons of longest duration of life, a correction is made for each of their death-rates, generally increasing them up to in some cases 10 per cent.

The Registrar-General for Ireland does not make corrections for age and sex distribution, but I make it for Dublin in my Annual Reports on the State of Public Health.

In the period 1864-73 the birth-rate was 28, the death-rate (corrected by 10 per cent. for defective registration) 28.677, and the zymotic death-rate (corrected) 2.915. In 1874-1883 the three rates were 31, 30.628, and 3.36. Corrections were made for the years 1884-1898, inclusive.

In the ten years ended 1884 the birth-rate was 29, the death-rate 27, or 3.628 below that of the previous decade, and the zymotic death-rate 2.624.

In the ten years ended in 1903 the birth-rate was 28, the death-rate was 25.87, and the zymotic birth-rate 2.624.

In 1904 the birth-rate was 29.5, the death-rate 23.35, and the zymotic death-rate 2.35.

Since the Public Health Act of 1878 came into force, twenty-seven years ago, the death-rate in Dublin has fallen more than 5 per 1,000. The zymotic death-rate has declined about one-third.

The difference between the male and female death-rates is shown by the following figures:—In the period 1897-1901 the deaths of males in England and Wales were in the ratio of 18.787 per 1,000 persons living, whilst in the case of females it was 16.493, or 2.384 less. The great difference in the mean expectation of life at different ages is shown as follows:—In the Dublin Registration Area in the period 1894-1903 the number of deaths at each age period to every 1,000 of the estimated population of the same age was as follows:—Under 5 years, 76.3; 5 years and under 20, 7.1; 20 and under 40, 12.0; 40 and under 60, 28.1; 60 and under 80, 78.4; 80 and upwards, 216.5. For 1904, the corresponding figures are as follows:—79.2, 6.1, 10.6, 26.3, 79.4, 213.8. It is sad to think that about one-fourth of the children born in Dublin die before attaining manhood. It is much the same in other cities.

The birth-rate has been practically stationary in Dublin for many years.

The infantile death-rate, formerly very high in Dublin, has declined considerably, and for some years past is slightly below that of the 75 largest English towns, exclusive of London.

The Dublin death-rate has not, however, declined to the same extent as that of the English towns, and is still far too high. I am disposed to believe that the large proportion of the population belonging to the very poorest classes has much to do with the causes of the high death-rate. In that class everywhere in towns there is a high death-rate, and if they exist in Dublin in proportionately larger numbers than in other cities, as I believe is the case, they would exercise an unfavourable influence upon the death-rate.

CAUSES OF DEATHS IN THE CITY OF DUBLIN IN 1904.

The death-rate in the City Districts is, of course, greater than in the Metropolitan Registration Area, which includes the Suburbs. In the latter the majority of the population are placed under far more healthy conditions as regards air-space, house accommodation, pecuniary means, &c.

The birth-rate, too, is very low in the Suburbs. In 1897 it was lower than the death-rate, in 1900 the rates were equal. In 1901 the death-rate was 0.3 per 1,000 in excess of the birth-rate, and in 1902 it was 1.6 below the birth-rate. In 1903 the birth-rate was 1.7 per 1,000 above the death-rate. In 1904 the birth-rate was 20 per 1,000 persons living, and was 2.1 above the death-rate.

Small-pox.—No death from small-pox was registered in Dublin from March, 1888, until June, 1894. In 1894, 64 deaths from this disease were registered, and in 1895 the number increased to 114. In 1896 three deaths from small-pox were recorded, in 1897 only two. No death from this disease was recorded in the period 1898 to 1902, inclusive. An epidemic occurred in 1903, which caused 34 deaths. There were 4 cases of the disease in 1904, but no death resulted.

Measles.—There was an epidemic of this disease, which prevailed from March to August, 1892, and then continued but in a very mitigated form, during the rest of the year. In 1893 there were 81 deaths recorded from this disease, or 351 below the number in 1892, and in 1894 the deaths were further reduced to 42, and in 1895 only 3 deaths were ascribed to this disease. In 1896, 10 deaths from this disease were registered. In 1897 it again assumed an epidemic form, and caused 388 deaths, but in 1898 only 3 deaths from measles were registered. In 1899 also there was an epidemic of measles, and the cases notified in that year numbered 5,554, and the deaths 568. The cases of this disease notified in 1900 numbered 611, and the deaths 75, of which 71 occurred in the first half of the year—62 of them in the first quarter. In 1901 only 7 deaths were registered. In 1902 there were 345 deaths. An epidemic of measles prevailed during the latter half of the year.

The number of cases notified reached 4,000. In 1903, 32 deaths from it were registered in Dublin. In the Suburbs, which have much less than one-third of the population of the City, there were 16 deaths from measles. In 1904, 229 cases were notified, but in that year the compulsory notification of the disease was repealed, as little, if any, advantage had resulted from notification.

Scarlet Fever.—116 deaths from scarlet fever were registered in 1896, being 92 more than in 1895, and 78 in excess of the number registered in 1894. In 1897, 102 deaths from scarlet fever were registered, 63 in 1898, 124 in 1899, 22 in 1900, 21 in 1901, 57 in 1902, 38 in 1903, and 17 in 1904.

Typhus Fever.—3 fatal cases of this disease were registered in 1901-1902, and 2 deaths in 1903. In 1904 only one death from typhus fever was registered.

Whooping Cough.—218 fatal cases of whooping cough were registered in 1904; 128 deaths were registered in 1903, and 18 in 1902. In 1901 the number was 186, in 1900, 137, in 1899, 50, and 131 in 1898. This disease became epidemic late in 1896, and was prevalent throughout the year, causing 143 deaths. This number exceeded that for 1895 by 55, but was scarcely up to the mean annual number for the previous ten years. In 1897 it assumed serious proportions, and 332 deaths caused by it were registered.

Diarrhœa and Dysentery caused 283 deaths. In 1903 there were 128 deaths from this disease, in 1902, 108, in 1901, 310, and in 1900, 355.

Enteric (Typhoid) Fever caused 61 deaths, or 12 less than in 1903. Having regard to the increased population of the City this is a comparatively low mortality from enteric fever. In the very hot, dry year, 1893, 218 deaths from this disease were registered out of a population of 245,001. In 1904 the enteric fever death-rate was the lowest on record. In 1902, 98 deaths from enteric fever were registered.

There were 52 deaths from *Diphtheria* registered in the year 1903, 67 in 1902, 32 in 1901, 54 in 1900, 50 in 1899, 47 in 1898, 51 in 1897, and 17 in 1896. This disease is

very fatal in London and some other English towns, and until lately was infrequent in Dublin. In 1904 there were 22 deaths from this disease registered, the lowest since 1896.

The total deaths from *Diseases of the Organs of Respiration* (exclusive of phthisis) numbered 1,436 in 1903, 1,654 in 1902, 1,544 in 1901, 1,608 in 1900, 1,708 in 1899, and 1,403 in 1898. In 1897 the number was 1,593, or 325 greater than in 1896; in 1895 the deaths numbered 1,712, in 1894, 1,271, in 1893, 1,330, and in 1892, 1,703. In 1904 the fatal cases of this disease numbered 1,469.

Phthisis or tuberculosis of the lungs caused 953 deaths in 1904. 953 deaths from this disease were registered in 1895, 828 in 1896, 901 in 1897, 953 in 1898, 1,006 in 1899, 1,348 in 1900, 1,032 in 1901, 1,049 in 1902, and 996 in 1903. Allowing for the increased population of Dublin since 1900 the deaths from phthisis show a slight decrease.

It is much to be regretted that phthisis is not a notifiable disease. The objections raised against it being made notifiable are that it would greatly embarrass the actions of the patients—that they would be precluded from appearing in public, or using tram cars, railway carriages, &c. It is, however, certain that if tuberculosis were added to the schedule of notifiable diseases patients suffering from it would not be regarded in the same way as small-pox or scarlet fever patients. The advantages of notification are obvious. The patients or those in charge of them could be supplied with useful information as to the conditions under which the patients should be kept. Disinfectants could be supplied to them when the patients vacated rooms; the latter could be quickly disinfected. The patients could be kept under a kindly observation which need not be obtrusive or unpleasant. On two occasions the Public Health Committee recommended, but vainly, the Municipal Authority to acquire power to enforce notification of tuberculosis. Sheffield, in a recent local Act of Parliament, has obtained that power, and Rathmines Urban District Council have obtained from Parliament power to make tuberculosis a compulsory notifiable disease, and also to enable the Council to appoint

a bacteriologist. The Public Health Committee have repeatedly endeavoured to secure the appointment of a bacteriologist who, amongst other duties, would examine expectorated matter in order to determine the presence or absence of the bacilli or micro-organisms which cause tuberculosis.

The Registrar-General kindly furnishes me with a list of the registered deaths from tuberculosis. This information enables me to have the rooms which had been occupied by the decedents thoroughly disinfected. In the few cases in which objection was made the disinfection was insisted upon under the provisions of the Public Health Acts, for, clearly, tuberculosis is an infectious disease. The idea that it is only the diseases which are mentioned in the Infectious Diseases Notification Act, or which have been added to the schedule to that Act, which concern disinfection. A room which has been occupied by a person suffering from any infectious disease must be disinfected if the sanitary authority requires it to be done. Although what I may term the compulsory disinfection of rooms which had been occupied by consumptives commenced rather late in 1894, 132 instances of such disinfection took place in 1904. In many cases the bedding and clothing of patients were disinfected.

In 1905 it is to be hoped more active steps will be taken to lessen the ravages of tuberculosis.

It is appalling to know that in the Dublin Registration Area the deaths due to all forms of tuberculosis in 1904 amounted to 1,779, or 19 per cent. of the total deaths from all causes.

It is a sad fact that many patients in advanced stages of phthisis occupy the same rooms, and sometimes the same beds, with healthy persons, to the great danger of the health of the latter. An urgent want is a Sanatorium for poor consumptives. It would even be very useful if, as I suggested some time ago, rooms were provided by the Sanitary Authority in which consumptives might, to a great extent, be isolated from the healthy members of their families. The hospitals rarely keep consumptives whose cases are hopeless to the termination of their

disease by death. If such cases were retained in hospital it would prevent the circulation of much tuberculous infective matter.

Deaths from all Causes.—During the year 1904 the deaths of 9,264 persons (4,656 males and 4,608 females) were registered as having occurred within the Dublin Registration Area. Omitting 418 deaths of persons admitted into public institutions from places outside the Dublin Registration Area, the deaths numbered 8,846, and the death-rate was 23.3 per 1,000 of the estimated population. Including those 418 deaths, the rate was 24.4 per 1,000, and was 1.4, or 5.4 per cent., below the mean death-rate for the last 10 years. In 1903 the death-rate was 22.8, and was the lowest death-rate recorded in Dublin since accurate registration of deaths commenced.

Of the 8,846 deaths properly chargeable to the Dublin Registration Area, 7,314 occurred in the City, and 1,522 in the Suburbs.

The death-rate was 24.9 in the City, and 17.9 in the Suburbs.

Of the 9,264 deaths, 2,765 occurred in the first quarter of the year, 2,172 in the second, 2,053 in the third, and 2,274 in the fourth. The weekly average was 174.

Of the 9,264 deaths no fewer than 3,600, or 38.9 per cent., occurred in the various workhouses, hospitals, lunatic asylums, and prisons. 764 deaths took place in the North Dublin Union Workhouse, 859 in the South Dublin, 27 (those admitted from the Dublin Registration Area) in the Rathdown Union Workhouse, and 1,968 in the various hospitals, prisons, and lunatic asylums. In the large English towns only about 18 per cent. of the deaths take place in public institutions. These facts seem to show that the proportion of poor and destitute people in Dublin is much larger than in the English towns.

Deaths from Zymotic Diseases.—The number of deaths from the principal zymotic diseases was 909, or 2.4 per 1,000 of the population. (The average rate for the preceding 10 years was 2.6.) In the City the rate was 2.7 per 1,000, and in the Suburbs 2.3.

CORRECTED DEATH-RATE FOR DUBLIN (CITY).

The recorded death-rate of towns requires to be corrected for age and sex distribution. Females live longer than males. It follows, therefore, that if two towns were in an equally healthy state, but that one of them contained a larger proportion of females than the other, the town with the lower proportion of females would have the higher death-rate. Similarly, a town, a larger proportion of the inhabitants of which were at the most favourable periods of life, would have a lower death-rate than a town equally healthy, in which the ages of the population were less favourable to longevity. The death-rate at different ages in the whole of England and Wales being ascertained, the Registrar-General of those countries corrects the recorded death-rates in the towns in which the ages of the population vary from those of the country at large. Norwich and Portsmouth were the only towns in which it was necessary to reduce the crude, or recorded, death-rate; in all the other towns it was necessary to increase it, and in some, like Manchester, very largely. In Dublin the ages of the population are favourable as regards longevity, and in Belfast they are even more so. I have corrected the recorded death-rates for Dublin Registration Area, Belfast, and Cork, 1904, and find them to be as follows:—

			Recorded Death-rate	Corrected Death-rate
Dublin Registration Area	...		22.8	24.8
City of Dublin	...	...	24.7	26.5
Belfast	...	...	20.5	22.9
Cork	...	...	23.8	23.6

**DEATHS IN THE CITY OF DUBLIN, OR MUNICIPAL DISTRICTS,
IN 1904.**

The total number of deaths from all causes was 7,314. The crude death-rate was 24.7 in 1903, 26.2 in 1902, 26.0 in 1901, 30.3 in 1900, 33.6 in 1899, 28.5 in 1898, 31.59 in 1897, 27.4 in 1896, 30.1 in 1895, 26.6 in 1894, 29.1 in 1893, 31.9 in 1892, 28.5 in 1891, 28.1 in 1890, 27.9 in 1889, 26.2 in 1888, 33.2 in 1887, 28.4 in 1886, 30.69 in 1885, and 29.96 in 1884.

Of the 7,314 deaths in 1904, 785 were caused by the principal zymotic diseases.

TABLE SHOWING NUMBER OF DEATHS FROM VARIOUS DISEASES, AND THE RATIO OF THE DEATHS PER 1,000 OF THE POPULATION, IN THE CITY OF DUBLIN, IN THE YEAR 1904.

NAME OF DISEASES					Number of Deaths	Rate of Mortality per 1,000 Persons Living
Zymotic Diseases—						
Small-pox					0	0.00
Measles					180	0.61
Scarlet Fever					17	0.05
Typhus Fever					1	0.00
Whooping Cough					218	0.74
Diphtheria					22	0.07
Simple and Ill-defined Fever					3	0.01
Enteric Fever					61	0.20
Diarrhoeal Diseases					283	0.98
Total, ..					785	2.67
Other General Diseases					1,343	4.57
Constitutional Diseases—						
Phthisis, or Pulmonary Consumption ..					953	3.24
Local Diseases—						
Convulsions and other Diseases of Brain and Nervous System					555	1.89
Diseases of	{	Organs of Special Sense			11	0.03
		Circulatory System			956	3.25
		Respiratory System			1,469	5.00
		Digestive System			423	1.44
		Lymphatics, &c.			12	0.04
		Urinary System			206	0.70
		Generative System			10	0.03
		Accidents of Childbirth			16	0.05
		Diseases of Locomotive System			8	0.02
		Do. Integumentary System ..			12	0.04
Total, ..					3,680	12.54
Deaths from other Specified Diseases					0	0.00
Do. Ill-defined and Unspecified Causes ..					408	1.39
Violent Deaths					145	0.49
Deaths from all Causes					7,314	24.92
Deaths from Principal Zymotic Diseases ..					785	2.67

**TABLE SHOWING DEATH-RATE OF CHILDREN UNDER ONE YEAR OF AGE
IN THE YEAR 1904.**

	All England and Wales	76 Largest English Towns including London	75 Largest English Towns excluding London	London	Dublin Regis- tration area
Per 1,000 of the esti- mated population under one year of age	145	159	165	145	170
Per 1,000 births regis- tered	146	160	166	146	171
Per 1,000 deaths regis- tered	250	270	280	245	213
Per 1,000 of the esti- mated total popu- lation	4.1	4.6	4.9	4.1	5

The epidemics of measles and whooping cough in 1904 raised the infantile death-rate above the usual figure, but in general the infantile death-rate in Dublin is about the same as in the large English towns, and is often somewhat under the rate for the largest, excluding London. The high death-rate in Dublin is not the result of a high infantile mortality.

VITAL STATISTICS OF JAPAN.

I have just received "The Annual Report of the Central Sanitary Bureau for the 34th year of Meiji (1901) issued by the Home Department of the Imperial Japanese Government. It is a substantial volume, printed in Japanese and English. It is late in being issued, no doubt in consequence of the war. It is dated 1905.

At the end of 1901 the population of the whole country was 45,227,464, an increase of 517,391 compared with the population of the previous year. With nearly the same population, this is about two-fifths greater increase than was the case in Great Britain. Germany, with a population 10 millions greater than that of Japan, increased about half a million per annum. The excess of births over deaths has steadily increased. In 1892 it

was 7.79 per 1,000 persons living; in 1895, 9.32; and in 1901, 12.28. The proportion of normal births in 1901 to every 1,000 inhabitants was 32.89, and that of still-births 10.43. Total, 43.32—a very high rate.

The average number of marriages per 1,000 inhabitants was 8.36, being an increase of 0.61 as compared with 1904.

The marriages were 8.36 per 1,000 persons and the divorces 16.93 per 100 marriages. Divorce is easily obtained in Japan, but the number is steadily decreasing. In 1892 the divorces were 33.97 per 100 marriages.

The death-rate from infectious diseases is moderate, the average for the decade ended in 1901 being 1.66 per 1,000 inhabitants. "Consumption" caused a rate of 1.54 per 1,000 inhabitants.

As regards Preventive Medicine, the Japanese are not behind advanced European peoples. The total number of persons liable for vaccination was 3,384,457, of which 1,704,329 were to be vaccinated for the first time, 910,866 for the second time, and 769,262 for the third time. Of the total number, 745,415 were not vaccinated owing to sickness and other causes. Of those liable to primary vaccination 78.45 per cent. were vaccinated, whilst of those liable for second and third vaccinations the proportions were 78.21 and 76.66 respectively. Of the 1,337,057 primary vaccinations, 179,348 were unsuccessful. Of the 712,248 secondary vaccinations 442,877 were unsuccessful, and of the 589,137 third vaccinations 433,026 were unsuccessful.

The vaccine lymph was prepared in Government institutions. Therapeutic serums are prepared in the Government laboratories on a large scale.

No fewer than 337,026 articles—chiefly food and drink—were analysed in the public laboratories. There were 284 convictions for the sale of harmful articles.

The total number of hospitals was 842, of which 4 were Governmental, 244 public, and 594 private. There were 2,496,518 examinations of prostitutes, of which 2.75 per cent. related to syphilis.

The number of physicians on the Medical Register is 33,508, of pharmacists 2,515. There are 28,486 midwives.

In 1901 215 physicians had something to do with crimes or offensive conduct; 82 of these were punished. Twenty midwives were placed under administrative discipline on account of crime or offensive conduct. Three were "prohibited" and 17 were "suspended."

THE EFFECTS OF TROPICAL LIGHT ON WHITE MEN.

Major C. E. Woodruff, M.D., Surgeon in the United States Army, has produced a very original work^a in some respects, but to great extent following the ideas of Professor von Schmaedel, of Munich. According to Major Woodruff it is not the high temperature of tropical climates which injuriously affect people of Teutonic or Slavonic races; it is the light which is injurious. He describes at great length all the emanations of the sun, radium, &c. He states that all radiations are electrical phenomena. Certain of these rays, when the temperature is high, injuriously affect protoplasm; and to protect man against those injurious influences nature has enabled him to accumulate in the course of thousands of years various skin pigments, which protect him against the injurious influences of the light. The Major believes that the white races who migrate to tropical or sub-tropical regions perish after several generations. He does not consider it correct to include the natives of India with white races under the term Aryan. He argues that the Aryan conquerors of India imposed their languages on the original natives, and subsequently died out. It does not follow that because English is spoken by a people they are necessarily of English descent. The negroes of the West Indies speak English. How has it come about that there are large populations in the tropical countries? Did they originate there? On the contrary, Major Woodruff believes that primitive man first appeared in a northern region. By slow migration, occupying thousands of years, the white-skinned man, pushing towards the tropics, gradually developed the pigments

^a *The Effects of Tropical Light on White Men.* By Major C. E. Woodruff, M.A., M.D., Surgeon U. S. Army. London and New York: Rebman Company. 1905.

which enabled him to endure the protoplasm decomposing light. The Greek has disappeared from Egypt, and the Goths from Africa, but the ancient types of man still remain. Major Woodruff has not treated fully the circumstances affecting white races in tropical America, but it must be admitted that the more northern of the white races have generally emigrated to the temperate parts of America, whilst the southern Europeans have colonised the tropical and sub-tropical parts of the world. The author points out the high infantile mortality of the Boers, but it is a fact that they have large families, are increasing in numbers, and have a fine physique. The Major has not fully proved his case as regards the disappearance of the Aryan race from India. The vast majority of the people, whatever the colour may be, have features as well as languages indicating Aryan origin. The original inhabitants of India were Mongolian, as many of the present ones are. If the Aryan race has disappeared, from whom are the present Indians, with their regular features, descended. Major Woodruff, whose personal experience of tropical climates has been acquired in the Philippines, recommends meat as an essential article of diet in hot climates. This is contrary to the opinions of many writers on diet. But the Major gives strong reasons for his recommendation. In apparent contradiction to the theories of Major Woodruff is the opinion lately expressed by Professor Boyce, of the Liverpool School of Tropical Medicine, that at a future time, not remote, West Africa may become habitable by white men, and, indeed, even a health resort.

MEDICAL MISCELLANY.

JAN BAPTISTA VAN HELMONT, "*Toparch or Governor, in Morede, Royenborch, Oorschot, Pellines, &c.*"; *Magician; Mystic; Theologian*; "*most Learned, Famous, Profound, and Acute Phylosopher*;" "*Chymical Physitian*"; *Pioneer of Modern Chemistry and "Greatest Chemist before Lavoisier"*; *Inventor of the Chemical Balance; Discoverer of the Original "Gas"; Possessor of the Philosopher's stone; Successful Transmuter of Metals*; and—*Strenuous Apostle of "Spontaneous Generation."*
By JOHN KNOTT, M.A., M.D., Ch.B., and D.P.H. (Univ. Dub.); M.R.C.P.I.; M.R.I.A., &c.

THE fact that "spontaneous generation" is again in the atmosphere—and on the present occasion with aggressive emphasis of assertion—is another instance of the re-elevation of a wave of human opinion which superficial observers had come to think had long ago been finally broken on the ocean of time by the pointed rocks of scientific criticism and discovery. The chaotic jargon with which the researches of Professor Loeb were so gorgeously decorated in the monthly magazines—on both sides of the Atlantic—some two or three years ago, soon came to be estimated at its true value. But the veteran philosophic scientist and accomplished physician, Charlton Bastian, has, after laying down a part of the burden of the practical work of a brilliantly successful professional career, returned with renewed energy to a domain of scientific research which has evidently been one of the favourite pre-occupations of his intellectual life, in which he many years ago displayed some of the brightest illumination of his many-sided genius, and has all along furnished some of his most original and independent lines of thought. Those who are fully acquainted with the quality of all the scientific work which bears the name of this observer require no other assurance that the last word has not yet been said on the phenomena of spontaneous generation. And just now comes an explosive announcement from a Cambridge laboratory to the effect that the researches of a gentleman, whose name is distinctly suggestive of ancestral connection with our own island, have yielded results which encourage the belief that he has actually reached—at least within Pisgah-range of—the long-sought object of the artificial

production of life. The reported results of Mr. Burke have, however, been received with far more pronounced appreciation by the lay press than by the scientific, and may be said, without prejudice, to require further confirmation before final acceptance. The newly awakened interest in the question of the occurrence of spontaneous generation will, however, necessarily have the effect of turning thinking minds towards the contemplation of the intellectual record of the giant pioneers of past ages in the same department of thought.

One of the most conspicuous and productive of those, in the trying period of the transition from mediæval to modern modes of thought and action, was Jan Baptista van Helmont, who was born at Brussels in 1578 (the same year in which William Harvey first saw the light), and died near the same city in 1644—thirteen years before his famous contemporary. He was the youngest son of a Flemish family of noble rank, and lost his father when a child. Having received, under his mother's supervision, "a pious and strictly Catholic" education, he passed through the routine university course at Louvain. He became intimately associated with some of the prominent Jesuits of that centre, and was initiated into the mysteries of magic by the famous Martin Delrio, whose *Disquisitiones Magicæ* so long remained the orthodox canon of witchcraft. His curiosity in this department having been gratified, his restless spirit, which evidently hankered for the possession of all knowledge as its province, sought solace in the philosophy of the Stoics. This in its turn soon ceased to satisfy, and the ardent van Helmont plunged into the vortex of mysticism, which then engrossed the attention of many of the most earnest inquirers after elusive truth, and revolved around the precepts and examples of Thomas à Kempis and Johann Tauler. This line of study he also in time abandoned, absolutely bewildered by its hopeless uncertainty, and entirely discontented with its prospects of anything approaching definite attainment. Having now become convinced of the baselessness of all these studies, he turned, pretty exactly as François Rabelais had done in a former generation under somewhat corresponding mental conditions, to the study of medicine, as the broadest and most fertile field available for the cultivation and advancement of knowledge in this world. With characteristic energy and ardour he soon made himself profoundly versed in the doctrines and lore of Hippocrates and Galen. And here he collided with another

stumbling block, of peculiarly disagreeable quality, too. One day he happened to pick up the glove of a young lady whose fingers were the subject of the *itch*, and contracted the disease by manipulating it, unsuspectingly. This very troublesome disorder was, by the exponents of Galenic pathology, then attributed to a combustion of the bile, occurring in connection with a saline state of the phlegm. The regulation treatment accordingly was: repeated venesection—to syncope; drenching purgation; and “starvation” diet. Our youthful enthusiast was by this regime soon brought to death’s door—without the slightest prospect of cure, or even the smallest alleviation, it need hardly be added, of the local complaint. The result was that he became utterly disgusted with the healing art, and publicly announced his renunciation of all its pretensions and vanities—as well as its pomps. He warmly expressed his contrition for having sacrificed both time and worldly station in descending to it, and distributed his medico-chirurgical library among students. He afterwards even expressed profound regret that he had not burned all the books which it contained, so bitter were his feelings against physic and everything pertaining thereto. But at this juncture he providentially became acquainted, for the first time, with the writings of Paracelsus, who was then an explosive exponent of the doctrine of the *three elements*, and a furiously iconoclastic antagonist of the “authority” of Hippocrates, Galen, and all the other “old masters” of medicine. According to the new light, every pathological phenomenon presented by the human body is necessarily due to: effervescence of the *salt*, combustion of the *sulphur*, or coagulation of the *mercury*. Treatment was directed accordingly; and it must be admitted that it is to the blundering empiricism of this audacious quack that we mainly owe our knowledge of the specific value of sulphur and mercury in scabies and syphilis, respectively. The application of sulphur cured van Helmont of his cutaneous affliction—through which he had suffered untold tortures, and barely escaped martyrdom, at the hands of the orthodox disciples of Hippocrates and Galen! His love for medicine was restored with the beneficial results of Paracelsian teaching and practice, and he took his doctor’s degree in 1599. In the mental dissatisfaction and uncertainty of his previous years he had refused to take the degree of M.A., declaring as his reason that so far from being a “Master” of each and all of the seven liberal arts, he

was not worthy of being called a disciple in even one ; and that he felt that his knowledge, like that of Adam, had only served to show him his nakedness. He has himself given a graphic account of the intellectual struggle which he honestly made in the endeavour to master knowledge, and to choose the best pathway in the pilgrimage of life ; how when tired of dabbling in magic he proceeded to the study of philosophy and ethics, as the only true knowledge ; and how his earnest efforts to inwardly digest and assimilate the works of Seneca, and Epictetus, and Thomas à Kempis and Johann Tauler left him with an unassimilable mental burden of unblending Stoic philosophy and Christian mysticism which weighed on him as a moral nightmare. While under the pressure of that incubus, he came to fancy that he saw himself like a huge "empty Bubble, whose Diameter reached from the Earth even to Heaven : for above hovered a flesh-eater ; but below, in the place of the Earth, was a bottomless pit of darkness." The obvious interpretation was : "I knew that Stoicism did retain me an empty and swollen Bubble, between the bottomless pit of Hell, and the necessity of imminent death." This instructive vision led him to the conclusion that Stoicism is but one of the forms of human pride ; and that man without the inspiration of God is but a cypher and a vain shadow. His spiritual advisers suggested his taking orders, and having high family influence, a rich living would be readily provided, but he shrank from realising in person the saying of St. Bernard—that he "should eat the sins of the people." For a little time he thought of law, but a short acquaintance taught him that its ordinances were often far removed from truth and justice ; while his conscience always asked him how he could duly guide and restrain his fellows when he found it so difficult to govern his own passions and direct his morals along the lines of rectitude. The turning-point in the career of the restlessly inquiring student would seem, in his own words, to have been reached "when I was tired and wearied with the too much reading of other things, for recreation sake, I roused over *Mathiolus* and *Dioscorides*, thinking with myself, nothing to be equally necessary for mortal men, as by admiring the grace of God in Vegetables, to minister to their proper necessities, and to crop the fruit of the same. Straightway after, I certainly found, the art of Herbarisme to have nothing increased since the days of *Dioscorides* ; but at this day the images of Herbs being delivered, with the names and shapes

of Plants, to be on both sides onely disputed: but nothing of their properties, virtues and uses, to have been added to the former invention and Histories: except that those who came after, have mutually feigned degrees of Elementary qualities, to which the temperature of the Herbe is to be attributed But since I was not apt to believe, neither did I finde, among Writers, the certainty sought for, I suspected it according to truth, that the giver of Medicine would remain the continual dispenser of the same On the other hand the misery of humane life was urgent, and the will of God, whereby everyone may defend himself so long as he can; but I more inclined with a singular greediness, unto the most pleasing knowledge of natural things; and even as the Soul became Servant to its own inclinations, I unsensibly slid, altogether into the knowledge of natural things,”

Then, having made himself familiar with the texts of all the recognised medical authorities, his closing reflection is almost worthy of the disgusted satiety of Israel's wisest monarch: “I knew my want, and it grieved me of my pains bestowed, and years: when, as indeed I observed, that all Books, with institutions, singing the same Song, did promise nothing of soundness; nothing that might promise the knowledge of truth, or the truth of knowledge.”

His observation of the practice of medicine led him to reflections quite as dismal as those inspired by his laborious study of its theory: “I would accompany a practising Physitian, straightway it repented me again, and again, of the insufficiency, uncertainty, and conjectures of healing.”

Possessed, as van Helmont thus was, from youth onwards, with an unsatisfied and unsatisfiable, appetite for knowledge, it is no matter for surprise that with his unusual opportunities he was able to attain, if not to the universal knowledge of his great Jewish prototype, to a vastly higher and wider range of scientific acquirement than the accepted authorities of former generations, or the great majority of the recognised leaders of his own. And so came the inevitable conclusion: “At length, I knew with *Salomon*, I had for the most part hitherto perplexed my Spirit in vain, and vain to be the knowledge of all things, which are under the Sun: vain are the searchings out of Curiosities.” But his record shows that it was unusual modesty, associated with unattainable aspirations, which produced this

self-depreciative estimate of van Helmont's scientific attainments and achievements. This contemporary of Bacon, and Descartes, and Shakespeare, and Harvey, and Galileo, and Kepler, and Napier assuredly added some of the most important of the great scientific contributions made to the rapidly growing monument of human knowledge and research which still represents the new illumination of the Renaissance. Four years after his death (1648) his collected works were published by his son in the dignified form of a portly folio. It bore the title, "*Ortus Medicinæ*." The high estimation in which its multitudinous contents were held is shown by the fact that eighteen years later they were introduced to the British public—without curtailment—under the impressive title of :

"**ORIATRIKE** or, Physick Refined. The common **ERRORS** therein **REFUTED**, and the whole **ART** Reformed and Rectified: **BEING** A New Rise and Progress of **PHYLOSOPHY** and **MEDICICINE**, for the Destruction of Diseases and Prolongation of Life. Written by that most Learned, Famous, Profound, and Acute Phylosopher, and Chymical Physitian, John Baptista Van Helmont, Toparch or Governor, in *Morede, Royenborch, Oorschot, Pellines, &c.* And now faithfully rendered into *English*, in tendency to a common good, and the increase of true Science; By *J. C.* sometime of *M. H. Oxon.* Job 32, 8.—*There is a Spirit in Man, and the inspiration of the Almighty giveth understanding.* Prov. 8, 12.—*I Wisdom dwell with Prudence, and find out knowledge of witty Inventions.* *Æternarum rerum seria contemplatio eò usq; animum nostrum subvertit, ut Divina loquuti videamur de rebus Naturæ subjectis, quæ tantò perfectiores sunt, quanto propriiores Æternis, &c.* London, Printed for *Lodowick Loyd*, and are to be sold at his Shop next the *Castle* in *Cornhill*. 1662."

And bound in the same volume, with continuous pagination, are: "*Opuscula Medica Inaudita: THAT IS, Unheard of little Works of Medicine.* Being

Treatises	{	1. Of the Disease of the STONE	} Written by . . ."	
		2. Of FEVERS .		[same author.]
		3. Of the HUMORS of Galen.		
		4. Of the PEST or PLAGUE .		

An address "*To the English Reader*" is prefixed—bearing

the subscription of H. Blunden, *Med. Licentiat.* And at the end of a "Premonition to the Candid Reader," the translator, John Chandler, signs his name in full.

Having been able to perceive the vanities of science and learning, as represented at that period of widespread intellectual agitation, so early in life, van Helmont—as an enthusiastic votary of truth—necessarily became an enemy of established "authority" in opinion. His independent position enabled him to carry out his investigations on his own chosen lines, and to form his own opinions without being obliged to receive them at the dictation of others. Soon after taking his doctor's degree, he married a rich Brabantine lady, and settled down to domestic life—in harmony with the practice of medicine and the pursuit of original scientific research. We learn that by his skill in physic "he performed such unexpected cures, that he was put into the inquisition as a man that did things beyond the reach of nature. He cleared himself before his inquisitors; but to be more at liberty, retired afterwards into Holland." His biographer, Lobkowitz, gives an impressive summary of the man and his work: "Helmont, for I knew the man, was pious, learned, famous; a sworn enemy of Galen and Aristotle. The sick never languished long under his hands, being always killed or cured in three days. He was sent for chiefly to those who were given up by other physicians; and to the great grief and indignation of such physicians, often restored the patient unexpectedly to health."

His contributions to science are more definitely attested, and more lasting, than his clinical achievements and the benefits thereof. He was the first to indicate the absolute necessity for the use of the *balance* in all chemical investigations, and demonstrated by its aid that the apparent destruction of matter which occurred in ordinary combustion, and other—more subtle—forms of chemical change, had no real existence; but was a creation of the illusory evidence of the senses, on whose testimony we are usually accustomed to rely with too implicit confidence. The use of two new terms which he coined for special scientific connotation throws a strong side-light on the strong and the weak aspects of van Helmont and his work. They are *Blas* and *Gas*. His idea of the former I prefer to give in his own words (Chandler's version):

"The Stars are to us for signes, times or seasons, dayes and

years. Therefore they cause the changes, seasons, and successive courses or interchanges. To which end, they have need of a twofold motion, to wit, locall, and alterative. But I signifie both these by the new name of Blas. And they do rather stir up a Blas by their mooving through a place, than by their light. Indeed in a dark night, the South winde oft-times followeth the blowing North-windes, and this likewise, it. Therefore because Blas breathes forth a luke-warm winde, it hath need, not of the heat or light of Heaven it self; but of place, direction and connexion. Whither, when the light of the Stars shall descend, the folding-doores do open and shut themselves.

“Therefore let the Key-keeper of the folding-doores, be the motion of the Stars. Which also moveth the Persledes or Pavements of the Air. Therefore all heat is not made by fire—existing fire, or light, nor doth cold shew a naked absence of heat: But the motive Blas of the Stars, is a pulsive or heating power or virtue, in respect of their Journey through places, and according to their aspects. Which circumstances in the Stars, do cause the first qualities on these inferiour bodies; no otherwise than bashfulness, anger, fear, &c., do stir up cold and heat in men. And that thing the Stars have by the gift of Creation.

“The Winde according to *Hypocrates*, is a flowing water of the Air: but I defining it by its causes, say, that the Winde is a flowing Air, mooved by the Blas of the Stars. And that for a naturall winde: but otherwise, it is often granted to an evill Spirit, that even without a Blas he should stir up windes, or increase a tempestuous Blas. Therefore the Air, unless it have a Blas, remains quiet, nor hath it the principle of motion from it self, but it comes to it from elsewhere.”

Further discussion of the meteorology of the above paragraphs I prefer to leave to the reader. The word *blas* was indeed known to Middle English as a phonetic variant or parallel form of *blast*. Whether van Helmont discovered it there, or invented it for himself, can hardly be decided at this date. Of his discovery of the original *gas*, and his invention of the term, he has given us the following account:—

“Surely I do experience four Elementary qualities, to be as in the outward bark of things; the second qualities to be more dangerous or destructive: but the most inward ones to be immediately pressed in the Archeus. Yet all of them to be from the bosom of the seede and forms: But no quality to come

forth from the first matter, as neither from the Wedlock of the Elements, because they are both feigned Mothers. But because the water which is brought into a vapour by cold, is of another condition, than of a vapour raised by heat: therefore by the Licence of a Paradox, for want of a name, I have called that vapour, Gas, being not far severed from the Chaos of the Auntients. In the meantime, it is sufficient for me to know, that Gas, is a far more subtile and fine thing than a vapour, mist or distilled Oylinesses, although as yet, it be many times thicker than Air. But Gas it self, materially taken, is water as yet masked with the Ferment of composed Bodies."

To the average scientific reader of the present day, such expressions of physical theory probably appear void of all true knowledge. But he should recollect that it was the period whose intellectual atmosphere was loaded with the explosive emanations from the "reformed" theology of Luther, and the "reformed" pathology of Paracelsus. Grafted on the quaternary system of elements and their conditions of single or complex existence—*earth, water, air, fire; cold, hot, dry, moist*—which had been transmitted down through the Middle Ages on the invincible authority of Galen, was the triple composition of all the various constituents of the universe, established by the assertion of the "Luther of Medicine." All bodies were ultimately constructed of *salt, sulphur, and mercury*; and all phenomena, normal and abnormal, natural and unnatural, physiological and pathological, were due to the arrangement (or disarrangement) of this *trinity* of original creative factors. The representation of the trinity was everywhere stamped throughout the whole range of creation. And the *Archæus*, which he also adopted from the teaching of his great master Paracelsus, was everywhere present—presiding, controlling, and regulating. Perhaps the chemical discovery with which his name has been oftenest associated is that of his *gas sylvestre*, the "spirit of wood," of Shakespeare and other contemporaries. The *Archæus* of water was, of course, productive of *fermentation*; and in this process he imagined that a body *intermediately* related to spirit and matter was formed. This he named "gas"; and he elaborated his view by destructive distillation of wood, from which he obtained a colourless fluid resembling water; and, on burning the charcoal residue, he produced the gas which he conceived to have been formed from the water. Such is the history of the

original discovery and isolation of *carbonic acid gas*, and the crude origin of the vast store of minute, as well as far-reaching, knowledge which it initiated. The distinctive cognomen which he conferred on the spirit of wood was given to distinguish this from another gaseous entity (chlorine) which he isolated about the same time by the action of *aqua fortis* on common salt.

This observer also became cognisant of the diminution of atmospheric air produced by burning substances in it. He was the first to employ the term *saturation* in connection with the process of solution. In connection with both these phenomena, too, he insisted on the fact that no matter was ever really destroyed. And the gas which was generated in the living body by fermentation was the *aura vitalis*.

The source of his inspiration in the coinage of the term *gas* does not seem to have been so definitely agreed on as in the case of *blas*. But the genesis of both words seem to me to have—almost inevitably—proceeded along parallel lines. *Gas* surely—I venture to think—bears the same genetic relation to *gast* (Anglo-Saxon) that *blas* does to *blast* (Middle-English); and is but a convenient (or fanciful, or arbitrary) phonetic variant of that appellation which is of so widespread distribution: in the Danish *geest*, German *geist*, English *ghost* and *gust*, &c.; all of similar pneumatic connotation. I must decline to admit that our author's text conveys the suggestion that he derived the name from the $\chi\acute{\alpha}\omicron\varsigma$ of the ancients; although the (approximately) infallible "Murray" adopts this view, and smooths over the explanatory bond of connection by pointing out that the Dutch pronunciation of *g* as a spirant accounts for its being employed to represent the Greek χ . I see nothing in the context to favour the acceptance of this theoretical item of etymology.

Van Helmont's scientific curiosity was gratified by the acquisition of a genuine specimen of the "philosopher's stone"; and he therewith effected *transmutation* into gold! His medical experience probably accounts for his failure to admit the claims made for that agent as the actual "*Elixir of Life*," and, accordingly, in the chapter which bears the heading of "*Arbor Vitæ*" we find the words of the mystical enthusiast thus written:

"I am constrained to believe that there is the Stone which makes Gold, and which makes Silver; because I have at distinct turns, made projection with my hand, of one grain of the Powder,

upon some thousand grains of *hot Quick-Silver*; and the buisness succeeded in the Fire, even as Books do promise; a Circle of many People standing by, together with a tickling Admiration of us all He who first gave me the Gold-making Powder, had likewise also, at least as much of it, as might be sufficient for changing two hundred thousand Pounds of Gold: But there is none who may have more than a tenfold quantity of Gold, and if he should have it, he should destroy it, that he might at length; make as much Gold from thence: For he gave me perhaps half a grain of that Powder, and nine ounces and three quarters of Quick-silver were thereby transchanged: But that Gold, a strange Man, being a friend of one evening's acquaintance, gave me. However, therefore, the Phylosopher's stone be in the nature of things; yet I have always supposed for the reasons aforesaid, that no Metallick Remedy contains the Blessing of the Tree of Life."

Much as he professed to despise the previously accepted authorities of ancient Greece in the various departments of philosophy and medicine, he must have been greatly influenced by his laborious investigations of their works. And, although he inclines so strongly to the system of Paracelsus in many of its most radical aspects, he does not hesitate to express uncompromising condemnation in others. He very obviously inclines to the view—usually ascribed to the first of Greece's seven creators of human wisdom—that *water* is the ultimate *element* from which all other forms of matter are in some way derived. He discusses the various aspects of this idea at great lengths, and it underlies his association of his own *gas* and the ancient *χάος*, already quoted—which suggested the notion of the etymology of the former term from which I have taken the liberty of dissenting. And the *Archæus* (of Paracelsus) was further defined and elevated by van Helmont into an all-prevading immaterial force which directed and controlled the specific characteristic functions and phenomena of all forms and types of existing matter—animate and inanimate. It originally educed all things from water by a species of *fermentation*. The central *Archæus*, the "Governor," of the human body, he located in the Stomach. When extended (personal) experience demonstrated that a dose of *henbane* produced nausea, and caused definite impairment of intellectual vigour, he found that the seat of the intellect or soul (*ψυχή*) was the pylorus. Memory was referred to the brain, desire to the

spleen, and volition to the heart. In further elaboration of his scheme of the human microcosm, its nutrition and growth were carried on in *six* stages (or *digestions*), followed by a *seventh* stage, of repose. The stomach can act only with the concurrence of the spleen, and this duumvirate carries out the *first* digestion. The acid mixture which passes into the duodenum is neutralised by the bile (*fel*) which comes from the gall-bladder—which he carefully distinguished from the biliary principle (*bilis*) contained in the general mass of the blood. This constitutes the *second* digestion. (The *fel* is not an excrementitious matter, but a true vital balsam.) The *third* digestion takes place in the vessels of the mesentery; and the *fourth* in the heart, where the vital spirit is added to the blood (by passing through the pores of the septum from the posterior to the anterior ventricle) which it makes more yellow and volatile. The *fifth* digestion consists in the conversion of the arterial blood into vital spirit. This process takes place principally in the brain; but is also carried out in all other parts of the body. The *sixth* digestion is the elaboration of the nutritive principle in each member, where the local *Archæus* prepares its own nourishment by means of the *spiritus vitalis*. The *seventh* period follows—nature's chosen rest, the recurring sabbath of the microcosm.

The *Archæus* and his agent, *Ferment*, would appear to carry out all procedures. Let us contemplate their feats in the process of *Generation*—parental and “*spontaneous*”:

“There are therefore double Ferments in nature: one indeed containeth in it a flowable air, the seminall *Archeus* which aspireth by its flowing into a living Soul: But the other doth onely contain, the beginning of the moving, or the generation of a thing into a thing: The which indeed, although in its beginning, it should not have a seminall air, which may embrace or contain the aims of things to be done; yet it straightway obtains a vapour, which, as well the local ferments, as those things which the disposition of the matter it self attaineth by externall nourishing warmth, do awaken: Whence something like an *Archeus* is made, which changeth, fitteth, and increaseth it self, and its own perceived entertainment: Moreover, afterwards it acteth the other things unto a proportion of perfection, and to what is required of that air: For this end doth at first abound with a certain, and that a genericall largeness: For although it rejoyceth to have directed the masse subjected under it, unto the scope of the conceived

ferment ; yet oft-times it receiveth the fewels of a more hidden light from elsewhere, and a rash boldness being taken, it aspireth also into a living soul.

“ For from hence, not onely lice, wall-lice or flies breeding in Wood, Gnats, and Worms, became the guests and neighbours of our misery, and are as it were bred or born of our inner parts, and excrements : but also, if a foul shirt be pressed together within the mouth of a Vessel, wherein Wheat is, within a few dayes (to wit, 21) a *ferment* being drawn from the shirt, and changed by the odour of the grain, the wheat it self being incrusted in its own skin, transchangeth into Mice : and it is therefore the more to be wondered at, because such kinde of insects being distinguished by the Signatures of the Sexes, do generate with those which were born of the seed of Parents : That from hence also, the likeness or quality of both the seeds, and a little vitall strength of the *ferments* may plainly appear : And which is more wonderfull, out of the Bread-corn, and the shirt, do leap forth, not indeed little, or sucking, or verysmall, or abortive Mice : but those that are wholly or fully formed. Now and then, the lowsie evill ariseth in us, and a louse, mans upper skin being opened, goes forth : he is also otherwise generated in the pores, being not indeed enclosed in the Egge-shell of a nit ; but small, and scarce to be beheld. But the gnat is alwayes not generated, but by the ferment being drawn more outward. Neither hath it been sufficient to have said in the Schooles, that such insects do proceed from putrified things :

“ For Birds Eggs also do notably putrifie, and stink hugely, before the constituting of a chick. Therefore life is in these putrified things, no lesse than in Eggs : nor is it sufficient to have doubted from whence those kindes of Insects may draw a uniform and specificall vitall spirit out of our Body, seeing a natural generation doth presuppose an imprinted Seal of likeness : For truly in an irregular generation, an *Archeus* sufficeth, not indeed a humane one, but such a one, which by a fermental virtue, and for identity or sameliness sake, doth alwayes generate in excrements, such Insects of a like or an equall form : And so, although in respect of us, it be a monstrous and irregular generation, yet it is naturall and ordinary in order to its causes, to wit, we affording onely a *ferment* and nourishing warmth : therefore the *ferment* of the shirt being sprinkled on the Wheat, doth resolve the matter by going or entering backwards, and so a youth-

ful mouse, but not a new one is born : For that, it hath respect unto another manner of making.

“ Therefore in the former, and vitall seedes, the generater inspires the *Archeus*, and the vitall *air*, together with the masse of the seed, with his own likeness : But in the latter, the *Odour* onely of the *ferment* is snuffed in from the containing Vessels, or from the contagion of the encompassing *air* : which when they shall be rightly fitted together, they are straightway formed into a Plant, or Insect, to wit, the *Air* being stirred up by the *Odour*, and ferment of putrefaction by continuance, which afterwards is exalted into a ruling *Archeus* : Even as concerning forms elsewhere.

“ Therefore seeds are made by the conception of the generater, making his own Image through desires, or from the *Odour* of the *ferment*, which disposeth the matter to the *Idea* or first shape of a possible thing : For even as the *matter* drawes from the *Odour* a disposition of transmutation ; so from the Image is afterwards made a disposition of the *matter*, which procureth and promoteth a specificall *ferment*. But in this the *ferment* differs from the seed : that, that is an *Odour*, or quality of some putrefaction by continuance, apt to dispose unto an alterity or successive alteration, and corruption of the masse : But the seed is a substance wherein the *Archeus* already is, which is a spiritual gas containing in it a *ferment* ; the Image of the thing, and moreover, a dispositive knowledge of things to be done.

“ Therefore whatsoever things do contract a filthiness, or putrefaction by continuance, from an *Odour*, do also presently conceive *Worms* : and therefore also Balsams know not how to putrifie, or breed *Worms* : For the *Odour* of the Herbe *Basil* being enclosed in the seed, produceth that Herbe, together with an *Air* that existeth within it ; which *Odour*, if it be changed by a putrefaction through continuance, it produceth true *Scorpions* : For neither is it a Fiction ; but in very deed the Herbe being bruised, and depressed between Bricks, and exposed to the Sun, *Aquitane* after some dayes, hath yielded unto us, *Scorpions*. But the more curious one will say, that the *Scorpion* came from without, to the sweet smell and food of the *Herbe* : but that doubt is prevented. For truly, the two bricks being mutually beaten together, did suitably touch each other, so that they hindered the entrance of the *Scorpion*, as well by their co-touching plainness, as by their weight : But a trench did contain the Herb in the

middle. The Ferment therefore in a voluntary seed doth after a neer manner reach to the Horizon or terme of life : For neither is one thing changed into another without a *ferment* and a *seed*."

Such views in connection with one of the most important departments of natural history read strangely enough in the light of twentieth century science. Still it must be remembered—before forming a just estimate—that spontaneous generation, with its unlimited vagaries, was referred, in unbroken succession, to the teaching of Aristotle and his representatives, down to van Helmont's own day. The corruption of one specimen of animal life was invariably succeeded by the generation of another. And there was a natural selection displayed, in at least many instances. The flesh of the Ox "corrupteth into Bees," and that of the "Horses into hornets." The authority of the divinely inspired text was also in favour of this item of popular science. When the lion-slayer returned to take the woman who "pleased Samson well," "he turned aside to see the carcase of the lion : and, behold, there was a swarm of bees and honey in the carcase of the lion." This fact, could of course, be explained only by admitting the occurrence of spontaneous generation. And not from animal tissues only did animal life arise. The life-giving properties of Egypt's parent river were so wondrous that specimens of manifold types of spontaneous activity were evolved from the mud almost the very moment it was felt exposed to the vivifying sun by the retreat of the waters of the annual inundation. Cleopatra's *aspic* was always, of course, in conspicuous evidence, at that critical date. The riotous prodigality of life displayed by Nature in the tropics easily begets ideas of spontaneous generation.

Most diseases of the organs and members of the body were, according to the Helmontian system, due to influence of the central *Archæus*, when in mood erratic, or positively mischievous, or malignant ; who resides, as we have seen, in the stomach, from which he emits his *ferments* to the various parts of the living organism. *Gout* was readily explained in this way. So was apoplexy, which was so often noticed to bear a definite relation to the condition of the stomach. And vertigo, and asthma, and epilepsy, and—madness ! The *Archæus*, in certain states of irritation, vents his rage by sending acrid acids to the lungs, of which the effect is pleurisy. When his ill-temper is vented on the kidneys, the renal secretion is affected in quality and quantity,

and dropsy results—an interesting anticipation of the observations of Richard Bright in the nineteenth century! The initial chill of a febrile attack is produced by the fear and consternation into which the *Archæus* is thrown by the invading cause. The subsequent elevation of temperature is due to his disordered movements and struggles.

In his choice of the weapons of his therapeutic armamentarium, van Helmont displayed the same incongruous mixture of strength and weakness which characterises his intellectual attainments and efforts in other departments. Having regard to the position and power of the central *Archæus*, the great object of his treatment was to regulate his influence, and to soothe his temper. The seat of government being in the stomach, dietetics were of vast importance. Then the temper and the imagination of the patient must be influenced to the utmost. Accordingly, it is no matter for surprise that he considered the judicious use of certain *words* to be very efficacious. He also freely employed preparations of mercury, of antimony, and of opium. The latter—as did wine—proved very soothing to the agitated *Archæus* in the delirium of fever. Van Helmont admitted the existence of a panacea, or universal remedy, to which he refers by the name of *liquor alkahest* and some other epithets. His chemistry was, undoubtedly, in nearly all directions far in advance of his generation, and in examining his often rather inexplicable diction, the fact should be remembered that he did not himself prepare his writings for publication. Many of them should be regarded as the private reveries of his hours of scientific relaxation. His chemical remedies were in many instances an immense improvement on the unspeakable mixtures of multiplex forms of matter which were administered to the sick and afflicted in the practice of the unquestioning disciples of Galen. Yet even in this department the almost fanatical mysticism of his views do not fail to rise to the surface.

“Yea, if the thing it self be more fully looked into, even inward Medicines, as well solutive as corrective, do work onely by way of an *odour*: For hence it is, that the smell of a medicine being once put off, the faculties or virtues of the same do perish. For I have often seen the *Quartane-Ague*, over-flowings of the wombe, melancholy, pains of the *Colick*, &c., to be seperated by Ointments alone: But it is certain, that not the ointment it selfe, but its *odour* onely creeps and acts inward: For so one that hath the

falling-sickness, falleth by an *odour*, yea the brain in the falling-evill, which heareth not, which perceiveth or feeleth not, nor which, if it hath fallen into the fire, doth withdraw it self, obeyeth onely *Odours*. For so an *Erisipelas* or *Anthonic's fire*, is healed by the *odour* of a towel dipt in *Hares* bloud, if it be bound on drie : So wounds, Ulcers, and Impostumes or corrupt swellings, do through *odours* applied by anointings, wax milde, or are exasperated or enraged."

Like Paracelsus, he confidently believed that nature had provided a medicinal remedy for every existing disease ; also that each country produces those which are therein requisite—so that it is a waste of time and labour, as well as of intelligence, to bring drugs from other regions of the earth. It was surely "inconceivable that the merciful Father of mankind should have been less merciful to His European children, before the discovery of the Indies than afterwards."

With this last quotation I reluctantly tear myself from the text of the "Father of Modern Chemistry," the apostle of "reformation" in medical science—in succession to Aureolus Philippus Theophrastus Bombastus Paracelsus Magnus von Hohenheim. His *facts* are sometimes more than questionable, in the light of the science of the twentieth century, and his *theories* cannot be said to be always precisely understandable at the present date. Yet his discoveries have proved of vast benefit to mankind—by their own illumination, and by the innumerable vistas which they exposed for the first time to the investigations of others. No medical man was ever less inspired by the promotion of his own material interests in the pursuit of his profession. In the choice and in the practice of his calling he avowedly took the example of Christ as his model, and I believe that no disciple ever endeavoured more faithfully to walk in the footprints of his Divine Master.

DR. ALAN GREEN'S WORK ON VACCINE.

THE French Académie de Médecine has awarded, through the Minister of the Interior, a Silver Medal to Dr. Alan Green, Bacteriologist in charge of the Vaccine Lymph Department, Lister Institute of Preventive Medicine, for his work on Vaccine, published in the Proceedings of the Royal Society, and in the Report of the Medical Officer, Local Government Board.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by the EDITOR.

VITAL STATISTICS

For four weeks ending Saturday, July 15, 1905.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending July 15, 1905, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 18.7 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,959. The deaths registered in each of the four weeks ended Saturday, July 15, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	June 24	July 1	July 8	July 15			June 24	July 1	July 8	July 15	
22 Town Districts	16.0	16.5	16.3	18.7	16.9	Lisburn -	27.3	18.2	18.2	50.0	28.4
Armagh -	-	13.7	-	20.6	8.6	Londonderry	22.3	18.6	16.1	8.7	16.4
Ballymena	14.4	28.7	14.4	9.6	16.8	Lurgan -	8.9	13.3	8.9	22.1	13.3
Belfast -	12.6	17.6	18.9	19.5	17.1	Newry -	12.6	29.4	16.8	12.6	17.8
Clonmel -	35.9	10.3	20.5	10.3	19.2	Newtownards	17.2	22.9	28.6	5.7	18.6
Cork -	16.4	17.8	15.1	19.2	17.1	Portadown -	15.5	-	-	10.3	6.5
Drogheda -	16.3	32.7	12.3	8.2	17.4	Queenstown	6.6	19.8	6.6	6.6	9.9
Dublin - (Reg. Area)	17.9	14.9	16.9	19.7	17.3	Sligo -	9.6	-	4.8	9.6	6.0
Dundalk -	8.0	27.9	-	8.0	11.0	Tralee -	5.3	15.9	10.6	21.1	13.2
Galway -	27.2	7.8	7.8	38.8	20.4	Waterford -	19.5	17.5	13.6	23.4	18.5
Kilkenny -	29.5	19.7	19.7	19.7	22.1	Wexford -	4.7	18.7	14.0	-	9.4
Limerick -	20.5	12.3	10.9	19.1	15.7						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, July 15, 1905, were equal to an annual rate of 2.3 per 1,000, the rates varying from 0.0 in seventeen of the districts to 9.1 in Lisburn—the 11 deaths from all causes in that district including 2 from measles. Among the 134 deaths from all causes in Belfast are 6 from measles, one from whooping-cough, 6 from enteric fever, and 13 from diarrhoeal diseases. The 14 deaths from all causes in Limerick include one from typhus and one from diarrhoea.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended July 15, amounted to 200—114 boys and 86 girls; and the deaths to 145—67 males and 78 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 19.9 in every 1,000 of the population. Omitting the deaths (numbering 2) of persons admitted into public institutions from localities outside the area, the rate was 19.7 per 1,000. During the twenty-eight weeks ending with Saturday, July 15, the death-rate averaged 23.2, and was 3.8 below the mean rate for the corresponding portions of the ten years 1895-1904.

Included among the 145 deaths registered in the week ended Saturday, July 15, were one death from measles, 2 from whooping-cough, and 14 from diarrhoeal diseases (58.3° was the mean earth temperature at a depth of 4 feet for the week at the Normal Climatological Station in Trinity College, Dublin). In the three preceding weeks deaths from measles numbered 2, 2, and one, and deaths from diarrhoeal diseases, 2, 2, and 6, respectively. One death was attributed to tetanus.

Lobar pneumonia caused 3 deaths, broncho-pneumonia 3, and *pneumonia* (not defined) 4 deaths.

The deaths from tuberculous disease, which numbered 25, 24, and 30 in the 3 preceding weeks, were 23. Two were from tubercular phthisis, 10 from *phthisis*, 2 from tubercular meningitis, and 9 from other forms of the disease.

Carcinoma and cancer (undefined) each caused 4 deaths.

The deaths of 7 infants, prematurely born, were registered.

The 13 deaths from diseases of the brain and nervous system include 7 from *convulsions*—all of these were of children under 5 years of age.

Diseases of the heart and blood vessels caused 17 deaths.

Nine deaths were attributed to diseases of the respiratory system, including 6 deaths from bronchitis.

Of the 6 accidental deaths, 2 (of children under 5 years of age) were due to scalds and 2 to drowning.

In 9 instances the cause of death was “uncertified,” there having been no medical attendant during the last illness. These cases include the deaths of 5 children under 5 years of age (including 4 infants under one year of age).

Sixty-five of the persons whose deaths were registered during the week were under 5 years of age (45 being infants under one year, of whom 15 were under one month old), and 29 were aged 60 years and upwards, including 16 persons aged 70 and upwards, of whom 6 were octogenarians.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the “Infectious Diseases (Notification) Act, 1899,” as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended July 15, 1905, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epi- demic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Fever	Total
City of Dublin	June 24	-	*	*	22	-	-	2	-	3	4	3	-	0	0	*	32
	July 1	-	*	*	20	-	-	2	-	3	5	13	-	0	0	*	43
	July 8	-	*	*	27	-	-	1	-	1	6	13	-	0	0	*	51
	July 15	-	*	*	3	-	-	2	-	3	5	3	-	0	0	*	23
Rathmines and Rathgar Urban District	June 24	-	*	*	-	-	-	-	-	-	-	-	-	0	0	*	-
	July 1	-	*	*	-	-	-	-	-	-	-	-	-	0	0	*	-
	July 8	-	*	*	1	-	-	-	-	-	1	1	-	0	0	*	3
	July 15	-	*	*	-	-	-	-	-	-	1	1	-	0	0	*	3
Pembroke Urban District	June 24	-	-	-	-	-	-	1	-	-	1	-	-	0	-	-	2
	July 1	-	-	-	-	-	-	-	-	-	-	2	-	0	-	-	2
	July 8	-	-	-	-	-	-	-	-	-	-	-	-	0	1	-	1
	July 15	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-
Blackrock Urban District	June 24	-	*	*	-	-	-	-	-	-	-	-	-	0	0	*	-
	July 1	-	*	*	-	-	-	-	-	-	-	-	-	0	0	*	-
	July 8	-	*	*	-	-	-	-	-	-	-	-	-	0	0	*	-
	July 15	-	*	*	-	-	-	-	-	-	-	-	-	0	0	*	-
Kingstown Urban District	June 24	-	*	*	-	-	-	-	-	-	-	1	-	0	0	*	1
	July 1	-	*	*	-	-	-	-	-	-	-	1	-	0	0	*	1
	July 8	-	*	*	-	-	-	-	-	-	-	-	-	0	0	*	-
	July 15	-	*	*	-	-	-	-	-	-	-	-	-	0	0	*	-
City of Belfast	June 24	1	*	*	10	-	-	-	-	18	14	9	-	0	1	*	52
	July 1	-	*	*	7	-	-	3	2	23	6	9	-	0	0	*	38
	July 8	-	*	*	5	-	-	2	2	11	6	4	-	0	0	*	30
	July 15	-	*	*	4	-	-	1	-	13	6	2	-	0	0	*	26

The Registrar of Dundalk reports:—"There is an epidemic of measles at present; no bad complication or deaths so far."

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended July 15, 1905, 2 cases of measles were admitted to hospital, 3 were discharged, and 7 patients remained under treatment at its close.

Ten cases of scarlet fever were admitted to hospital, one was discharged, and 40 cases remained under treatment at the close of the week. This number is exclusive of 22 patients still under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital, Dublin.

Three cases of diphtheria were admitted to hospital, 6 were dis-

charged, and 16 patients remained under treatment at the close of the week.

Ten cases of enteric fever were admitted to hospital, 7 were discharged, and 41 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 7 cases of pneumonia were admitted to hospital, 6 were discharged, there were 2 deaths, and 12 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality, in the week ended July 15, in 76 large English towns, including London (in which the rate was 11.7), was equal to an average annual death-rate of 12.9 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 14.3 per 1,000, the rate for Glasgow being 14.2, and for Edinburgh 13.6.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.,
Long. 6° 15' W., for the Month of June, 1905.*

Mean Height of Barometer,	-	-	29.951 inches.
Maximal Height of Barometer (22nd, at 9 p.m.),	30.360	..	
Minimal Height of Barometer (17th, at 9 a.m., and 28th, at 9 p.m.),	-	-	29.658 ..
Mean Dry-bulb Temperature,	-	-	58.4°.
Mean Wet-bulb Temperature,	-	-	54.5°.
Mean Dew-point Temperature,	-	-	51.0°.
Mean Elastic Force (Tension) of Aqueous Vapour,	.379	inch.	
Mean Humidity,	-	-	77.0 per cent.
Highest Temperature in Shade (on 26th),	-	77.0°.	
Lowest Temperature in Shade (on 5th and 11th),	46.2°.		
Lowest Temperature on Grass (Radiation) (5th),	41.0°.		
Mean Amount of Cloud,	-	-	61.2 per cent.
Rainfall (on 11 days),	-	-	1.175 inches.
Greatest Daily Rainfall (on 18th),	-	-	.361 inch.
General Directions of Wind,	-	-	N.E., E.

Remarks.

June, 1905, was a beautiful and in all respects a favourable month. A moderate rainfall was distributed over some 11 days. It was, therefore, a dry month; it was also bright, with a large

preponderance of N.E. and E. winds. The only heavy rains in Dublin were those of the 16th—which was accompanied by thunder—and of the 18th, .361 inch in the City, but .913 inch at Stillorgan. The mean temperature was considerably above the average, and a very warm period occurred from the 21st to the 27th inclusive, the daily maxima all being above 70°. The amount of cloud was 61.2 per cent. at 9 a.m. and 9 p.m. The estimated duration of bright sunshine was 237.5 hours, or a daily average of 7.9 hours.

In Dublin the arithmetical mean temperature (59.6°) was above the average (58.0°) by 1.6°; the mean dry-bulb readings at 9 a.m. and 9 p.m. were 58.4°. In the forty years ending with 1904, June was coldest in 1882 (M. T. = 55.8°) and 1879 ("the cold year") (M. T. = 55.9°). It was warmest in 1887 (M. T. = 62.3°); in 1896 (M. T. = 61.4°); and in 1899 (M. T. = 61.3°). In 1904 the M. T. was 57.8°.

The mean height of the barometer was 29.951 inches, or 0.034 inch above the corrected average value for June—namely, 29.917 inches. The mercury rose to 30.360 inches at 9 p.m. of the 22nd, and fell to 29.658 inches at 9 a.m. of the 17th, and again at 9 p.m. of the 28th. The observed range of atmospheric pressure was, therefore, 0.702 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 58.4°, or 5.2° above the corresponding M. T. for May, 1905. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* × .465), the value was 59.1°, or 1.6° above the average mean temperature for June, calculated in the same way, in the thirty years, 1871–1900, inclusive (57.5°). The arithmetical mean of the maximal and minimal readings was 59.6°, compared with a thirty years' average of 58.0°. On the 26th the thermometer in the screen rose to 77.0°—wind, E. N. E.; on the 5th the temperature fell to 46.2°—wind, N.W.; on the 11th also the minimum was 46.2°—wind, N.E. The minimum on the grass was 41.0° on the 5th.

The rainfall amounted to 1.175 inches on 11 days. The average rainfall for June in the thirty-five years, 1866–1900, inclusive, was 1.920 inches, and the average number of rainy days was 15. The rainfall, therefore, and also the rainy days were considerably below average. In 1878 the rainfall in June was very large—5.058 inches on 19 days; in 1879, also, 4.046 inches fell on 24 days. On the other hand, in 1889, only .100 inch was measured on 6

days. In 1887 the rainfall was only .252 inch, distributed over 5 days. In 1904, 1.076 inches fell on 10 days.

High winds were noted on only 4 days, but reached the force of a gale on the 20th and 21st. Solar halos were seen on the 9th, 15th, 17th and 20th. Temperature reached or exceeded 70° in the screen on 7 days—the 21st and 6 following days—compared with 4 days in 1904, 2 days in 1903, only 1 day in 1901, and 8 days in 1902. Thunder was heard on the evening of the 16th. The atmosphere was foggy on the 23rd and 26th.

The rainfall in Dublin during the six months ending June 30th amounted to 10.201 inches on 92 days, compared with 12.817 inches on 102 days in 1904, 15.054 inches on 108 days in 1903, 12.344 inches on 98 days in 1902, 9.352 inches on 80 days in 1901, 13.090 inches on 114 days in 1900, 11.295 inches on 95 days in 1899, 12.115 inches on 98 days in 1898, 13.950 inches on 113 days in 1897, 7.854 inches on 84 days in 1896, only 6.741 inches on 67 days in 1887, and a thirty-five years' average of 12.060 inches on 95 days.

At the Normal Climatological Station in Trinity College, Dublin, the observer, Maurice S. Moore, returns the mean height of the barometer as 29.953 inches, the highest reading observed being 30.363 inches at 9 p.m. of the 22nd, the lowest, 29.657 inches at 9 p.m. of the 18th. The arithmetical mean temperature was 58.4°, the mean dry-bulb reading at 9 a.m. and 9 p.m. being 58.2°. The thermometer rose to 74.8° in the shade on the 26th, having fallen to 45.6° on the 11th, when the grass minimum was 36.1°. Rain fell on 10 days to the amount of 1.132 inches, .360 inch being measured on the 18th. The number of hours of bright sunshine registered by the Campbell-Stokes sunshine recorder was 217.6, giving a daily average of 7.3 hours. The corresponding figures for June, 1904, were 231.5 hours and 7.7 hours. The temperature of the earth at a depth of one foot ranged from 55.5° on the 6th, to 64.4° on the 27th, the mean being 59.4°. The corresponding figures at a depth of four feet were—lowest, 52.9° on the 1st and 2nd; highest, 57.3° on the 30th; mean, 54.6°.

Mr. R. Cathcart Dobbs, J.P., reports that at Knockdolian, Greystones, Co. Wicklow, the rainfall was 1.500 inches on 10 days, compared with 3.341 inches on 16 days in 1902, 1.785 inches

on 11 days in 1903, and 2.280 inches on 10 days in 1904. The heaviest rainfall in 24 hours was .370 inch on the 19th, besides which .320 inch fell on the 18th. The total fall since January 1 has been 11.111 inches on 77 days, compared with 14.307 inches on 94 days in the first six months of 1904, 17.440 inches on 90 days in 1903, 15.091 inches on 84 days in 1902, 13.670 inches on 75 days in 1901, 18.191 inches on 105 days in 1900, 19.510 inches on 95 days in 1899, 13.500 inches on 88 days in 1898, 18.125 inches on 106 days in 1897, and 7.356 inches on 61 days in 1896.

At the Royal National Hospital for Consumption, Newcastle, Co. Wicklow, Dr. B. H. Steede registered a rainfall of 2.051 inches on 13 days. The maximal fall in 24 hours was .430 inch on the 19th, .330 inch having been measured on the 18th, and .340 inch on the 14th. The total rainfall from January 1 to June 30 inclusive was 11.666 inches on 87 days. The screened thermometers at this station rose to 72.1° on the 23rd, having fallen to 43.0° on the 4th.

Dr. Arthur S. Goff returns the rainfall at Lynton, Dundrum, Co. Dublin, at 1.51 inches on 12 days, compared with 1.22 inches on 14 days in 1904, 1.54 inches on 12 days in 1903, 3.08 inches on 19 days in 1902, and 1.71 inches on 13 days in 1901. The greatest daily fall was .54 inch on the 18th. The mean shade temperature was 60.0° . The thermometric range was from 46° on the 9th to 83° on the 21st.

The rainfall recorded at Cloneevin, Killiney, Co. Dublin, by Mr. R. O'B. Furlong, C.B., was 1.56 inches on 11 days. The maximal fall in 24 hours was .51 inch on the 18th. The average rainfall in June in the 20 years (1885-1904) was 1.807 inches on 13.1 days. The total fall at Cloneevin since January 1, 1905, amounts to 12.56 inches on 89 days.

Mr. T. Bateman reports that the rainfall at the Green, Malahide, was 1.41 inches on 10 days; and that the mean shade temperature was 58.4° , the extremes being—highest, 76° ; lowest, 43° .

Dr. C. Joynt returns the rainfall at 21 Leeson Park, Dublin, as 1.215 inches on 10 days, .410 inch having been recorded on the 18th, and .310 inch on the 16th.

At White Cross, Stillorgan, Co. Dublin, Miss Muriel O'Sullivan registered a rainfall of 2.049 inches on 10 days—the largest measurement in 24 hours being .913 inch on the 18th.

The Rev. Arthur Wilson, M.A., reports a rainfall of 4.31 inches at the Rectory, Dunmanway, Co. Cork. From the 2nd

to the 13th of June only .08 inch of rain fell, but on the other hand .75 inch was measured on the 18th, 1.02 inches on the 19th, .64 inch on the 20th, and 1.00 inch on the 28th.

Mr. W. Miller returns the rainfall at Wellesley-terrace, Cork, at 2.42 inches on 13 days—this amount falling short of the average for June by .27 inch. The greatest rainfall in 24 hours was .52 inch on the 19th. The rainfall of the first six months of 1905 in Cork was 18.29 inches on 101 days, or .29 inch in excess of the average. The rainy days were 8 over the average for the half-year.

At the Ordnance Survey Office, Phoenix Park, Dublin, rain fell in June on 11 days to the total amount of 1.075 inches, .325 inch being registered on the 18th. The duration of bright sunshine was 217.1 hours, the most in one day being 14.2 hours on the 14th.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 59.6° . This is the highest mean temperature for June during 19 previous years (1873–83 and 1898–1904); it is 3.3° above the average, the next highest mean being 58.9° for June, 1873. The extremes were—highest, 74.7° on the 26th; lowest, 47.5° on the 4th and 12th. At Bournemouth, the mean was 59.7° , the extremes being—highest, 79° , on the 28th; lowest, 46° , on the 7th. The mean daily range was 15.1° , at Bournemouth it was 14.1° . The mean relative humidity was 75 per cent. The mean temperature of the sea at Sandycove bathing-place was 54.6° , being 0.5° below the average for the month during the previous 7 years. The total rainfall was 1.58 inches on 9 days, at Bournemouth it was 3.38 inches on 16 days, and at Dungeness it amounted to 5.92 inches on 16 days. The total rainfall for the first 6 months of 1905 at Kingstown was 10.71 inches on 83 days, at Bournemouth it was 11.46 inches on 82 days. The total duration of bright sunshine was 226.7 hours, being 53.6 above the average for June during the previous 4 years, as compared with 217.1 hours at the Ordnance Survey Office, Phoenix Park, 207 hours at Valentia, 190.6 hours at Parsonstown, 240.8 hours at Southport, 187.6 hours at Hastings, and 175.9 hours at Bournemouth.

PERISCOPE.

THE FIRST INTERNATIONAL CONGRESS FOR THE STUDY OF RADIOLOGY AND IONISATION.

THIS Congress will be held this year at Liège, from the 12th to the 14th of September inclusive. The Congress will comprise two sections, devoted to physical and biological science respectively, and will meet under the patronage of the Belgian Government. The programme of the second section includes the examination of the physical properties of radioactivity and of the other radiations, as well as their applications to practical medicine. A special sub-committee, presided over by Professors Bouchard and d'Arsonval, Members of the Institut de France, and of the Académie de Médecine, and composed of Doctors Béclère, Bergonié, Broca, Charpentier, Charin, Danysz and Oudin, will add to the value of the Congress by meeting to examine and classify such communications and memoirs as may be addressed to the Organising Committee. Further information may be obtained on application to the General Secretary, No. 1 Rue de la Prévôté, Brussels. The Organising Committee call the attention of intending contributors very specially to the necessity of letting them have, with the utmost despatch, the text of articles intended to be read before the Congress, otherwise, in fact, it will be impossible to have the papers printed in time to be of any service. The Committee further beg of authors to favour them by communicating the titles of their communications forthwith.

A NEW ZEALAND HEALTH RESORT.

DR. J. M. S. LEVIS, F.R.C.S.I., D.P.H., has kindly sent the following Abstract Meteorological Report for the month of May, 1905. The observations were taken by Dr. Arthur S. Wohlmann, Government Balneologist at Rotorua, the chief health resort of New Zealand. May, of course, is the first winter month in New Zealand. Rotorua is situated in the North Island :—*Barometer*.—Mean for month, 30.34 inches ; maximum for month on the 3rd, 30.75 inches ; minimum for month on the 12th, 30.00 inches ; extreme range, the difference between the maximum and minimum, .75 inches. *Temperature in shade*.—Mean maximum temperature,

60.8° F.; mean minimum temperature, 45° F.; approximate mean temperature for the month, 53° F.; mean daily range of temperature, 16° F.; extreme maximum temperature on 3rd, 68° F.; extreme minimum temperature on 7th, 33° F.; extreme range of temperature for month, difference between the extreme maximum and the extreme minimum, 35° F. *Exposed Thermometers.*—Mean solar radiation, 97° F.; maximum solar radiation on 3rd, 112° F.; mean terrestrial radiation, 18° F.; minimum terrestrial radiation on 6th, 6° F.; mean daily range between the extreme temperature of night and day, 75° F. *Hygrometrical*—Mean elastic force of vapour, 0.299 inches; mean temperature of the dew point, 45° F.; mean degree of moisture (saturation = 100) 74 per cent. *Rain.*—Total rainfall, 3.53 inches; number of days on which rain fell, 16 days; maximum rainfall in any twenty-four hours, on the 1st, .91 inches. Mean amount of cloud for month, 7 (clear sky = 0, overcast sky = 10).

AILUROPHOBIA.

S. WEIR MITCHELL (*American Medicine*, May 27, 1905) says sufferers from cats may be classified as follows :—(1) Asthmatics—cat asthma. (2) Cat fear, with or without sequent excessive, emotional manifestations, and only on sight. (3) Cat fear. Power to be sure an unseen cat is near. Symptoms same as in Class 2, and apt to be extreme. (4) Those of the last class can detect the cat by smell, or may sometimes and not always. (5) Cases occur in which the consciousness of a cat as present through its smell once existed, but does not now, and yet the ability to detect unseen cats remains. (6) It is, therefore, likely that the cat emanations may affect the nervous system through the nasal membrane, although unrecognised as odours. Many of the victims declare even strange cats seem to have an unusual desire to be near them, jump on their laps and follow them.—*Medical News*, New York, Saturday, July 15, 1905.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Three Star Swiss Dry Milk.

THE invention of the Just-Hatmaker process for drying milk was widely welcomed by all interested in the public health two or three years ago. This process makes it possible to concentrate

milk into a very convenient and portable form without chemically changing any of the constituents that make it so valuable as a food. The milk is at the same time completely sterilised, and thus is rendered absolutely safe from the innumerable chances of contamination that might otherwise affect it. The Three Star Swiss Dry Milk is manufactured at Glockenthal, in Switzerland. The particular point to which we would venture to call attention is that, while preserving all the essential features above described, the manufacturers of this preparation have succeeded in overcoming an objection that was at first urged against Dry Milk—viz., that its flavour was spoilt by the process of manufacture, which rendered it so unpalatable as to be unfit for ordinary domestic use. The Three Star Swiss Dry Milk is a pure rich milk, perfectly sterile and very palatable.

“ Wellcome ” Brand Chloroform.

It is frequently maintained that one reason for the varying results obtained in anæsthesia is the difference in the chloroform employed, and that this is due either to the material used in its manufacture or to the method of preparation. It has been demonstrated recently that a proportion of ethyl chloride, so small as hardly to be capable of detection by chemical means, is often present in chloroform, and has a marked beneficial influence on its anæsthetic action.—(Wade & Finnemore, *Journal of the Chemical Society*, 1904, 85, 938.) To overcome the difficulty occasioned by the variability above referred to, “ Wellcome ” Brand Chloroform has been introduced. This is particularly characterised by containing a small, but definite amount of ethyl chloride. In its production the most scrupulous care is taken to ensure the highest attainable degree of purity, and, especially, freedom from irritating products of decomposition. While recognising that the quality of the chloroform employed is but one factor in the successful use of this anæsthetic, it is believed that the introduction of a chloroform of unvarying reliability will prove of service to the medical profession. “ Wellcome ” Brand Chloroform is supplied in $\frac{1}{4}$ lb. and 1 lb. amber-coloured stoppered bottles. A special modification of the neck and stopper of the $\frac{1}{4}$ lb. bottles enables the operator to drop the chloroform slowly. These convenient bottles are supplied free of charge.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

SEPTEMBER 1, 1905.

PART I.

ORIGINAL COMMUNICATIONS.

ART. X.—*Sedatives and Narcotics in the Treatment of the Insane.* By SIDNEY JOHN CULLUM, B.A., M.D., B Ch., B.A.O. (Univ. Dubl.); Ex-Medical Scholar, Trin. Coll., Dubl.; Member of the Medico-Psychological Association of Great Britain and Ireland; Medical Assistant, Crichton Royal Institution, Dumfries.

INTRODUCTION.

IN writing a thesis on this most interesting subject, after several years' asylum experience, I am confronted at the outset with the knowledge that my available material is very small. There are two main reasons for this fact:—

1st. Although there are in our Pharmacopœia many drugs which come under the above heading, yet they may be, as regards their efficacy, reduced to a very few which are at all serviceable.

2nd. The modern treatment of the insane is directly opposed to the practice of drugging in any shape or form, and the more one sees of this treatment the more one gets convinced that, judging from results, the fewer

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drugs used the better for the patient, not only from the standpoint of recovery, but also for their physical well-being.

Indeed, I shall at once make the sweeping statement that at the present time we have not in our Pharmacopœia, or out of it, a sedative or narcotic which is not harmful to the physical health of the patient.

Although, as I have stated above, drugging is not now countenanced in asylum work, yet the fact remains that we shall always in certain cases require the use of sedatives. We have not as yet got one which fulfils all the requirements of what I consider to be a perfect sedative—viz., one which is harmless in its effects, quick in its action, easily administered, and permanent in its results. When we do get such a drug, not only will our recovery rate be higher, but also—and this almost necessarily follows—our asylums will not be overcrowded to the extent they are with irrecoverable demented.

In administering drugs one has carefully to consider the symptoms presented to one, and to come to a definite conclusion as to what class of drug in the first place and what particular drug of that class in the second place is likely to benefit the patient.

The drugs at our command may be roughly classified into (1) general sedatives, (2) pure hypnotics, (3) diminishers of reflex irritability, (4) motor depressants.

Now, this classification, although rough, is very sharply defined, and it is apparent that one must be very certain as to which drug is likely to be of service in each particular case.

For purposes of utility and convenience I shall divide my subject into the above four headings, briefly discussing the uses, advantages, and disadvantages of the drugs of each class according as I have found them to be of service to me in actual practice.

PART I.—GENERAL SEDATIVES.

Of the large number of drugs in this class there are only three which may be considered to be of use among the insane. These are sulphonal, trional, and cannabis

indica. I shall treat of them in their order of comparative usefulness.

Sulphonal is a white crystalline powder, insoluble in cold water, slightly so in hot, and fairly soluble in absolute alcohol.

Although it is an hypnotic to a marked degree, its slowness of action renders it almost useless as such, and it is far preferable to take advantage of this defect and make use of it as a sedative in the daytime.

The class of patients most suitable for its exhibition is one of the most troublesome in an asylum ward. They are those who are labouring under motor excitement, are noisy, impulsive, dangerous, smashing, and, generally speaking, unmanageable.

It is pitiable at times to see patients in such a state that they require continual watching, are resistive and violent, and who try the patience of nurses and attendants to the utmost degree.

To such sulphonal acts as a charm, and its advantages are very apparent. Although I object to the drug for reasons given below, yet the temptation—in fact the necessity—for administering the drug is overwhelming. The result, if given with discretion, is such that the patient is reduced to quiescence in a comparatively short period, and rendered amenable to extraneous treatment.

Dosage.—As a general rule I start my patient on 30 grs. morning and evening after food until I get them well under the influence of the drug, then gradually diminishing the daily quantity until I find out the exact dose which is necessary to keep the patient under control. The disadvantages of sulphonal are many. The fact of its great insolubility, and, therefore, difficulty of administration, renders it at the outset objectionable. I at first tried to give it suspended in mucilage, but found it a wasteful method, and, moreover, in nine cases out of ten the patient got only half the dose intended. At present I find the best and most economic way to give it is to pour boiling water or milk on to the dose, and to allow this to cool sufficiently to render it drinkable. The powder dissolves, and has not time to separate out before

it is taken. It may be administered in whisky punch, but I found this method not only expensive but also that the action of the drug was delayed to an appreciable extent.

Its effects must be carefully watched, as its action on the system is sometimes very marked and severe. It has a tendency to accumulate and cause a state of drowsy, stupid drunkenness, going on to collapse with a weak fluttering pulse, vomiting, and paralysis.

An even worse condition is sometimes to be feared—viz., the occurrence of hæmatoporphyrin in the urine.

In my experience of mental work two such cases have come under my notice. In both the condition of the urine was the first thing that drew my attention. It was normal in quantity, reaction, and specific gravity, but its colour was of a deep purple. Examined for blood, it gave a negative result, and, on consulting the books, I came to the conclusion that my patient was suffering from hæmatoporphyrin urea. Her condition was very grave. She looked very ill, vomited almost continuously, and became very exhausted. The pulse was weak and running, and, despite of all I could do, she gradually sank into a state of coma, ending in death.

In the second case, also a female, profiting by experience, I instantly stopped the drug, washed out the stomach, and administered stimulants both by the mouth and hypodermically, the result, fortunately, being recovery.

These two cases have made me ever watchful of the drug. It has a marked deleterious effect on the action of the heart, and the pulse should be carefully watched. It upsets the digestive functions to a great degree, giving rise to loss of appetite, anæmia, and frequent troublesome vomiting. It is advisable in all cases treated by sulphonal to give a saline purge frequently, thus preventing accumulation and consequent irritation.

Sulphonal is a drug which is very largely used in asylum work, but it should be used with very great discretion. It does not do to say, "Oh, give her a sulphonal powder," in treating every patient who is noisy and troublesome. Try every other means of calming the patient before resorting to its use, and if, in the end,

compelled to do so be very watchful of its effects, and above all do not push it too far.

At the present, of over five hundred patients under my immediate charge, I have only half a dozen who require it more or less habitually, and this number I am ever striving to reduce to a vanishing point.

Trional.—This is a comparatively recent addition to our list of general sedatives. It is a crystalline substance, closely allied to sulphonal in chemical composition. It labours under one of the disadvantages of sulphonal in that it is only sparingly soluble in water, and is, therefore, as difficult to administer. It is, moreover, a much more expensive drug, and is, in consequence, not much used in pauper asylums.

Dosage.—10 to 30 grs., best given in hot water, in which it is much more soluble than sulphonal.

It has many advantages over sulphonal. Its action is much quicker, the desired effect being produced in from 30 to 60 minutes. It has not the same pronounced accumulative action, and does not leave the unpleasant sequelæ of torpor, digestive disturbance, or heart symptoms. On the other hand, its effects pass off much more quickly, and the quantity of the drug used must, in consequence, be much greater.

Cannabis Indica.—Indian hemp is one of the principal ingredients in the many patent sedative preparations which flood the market at the present time. In asylums it is not used to any great extent. Of its preparations the extract and the tincture are the most frequently prescribed, and of the two the latter is to be preferred.

The class of patient most suitable for its exhibition is the senile dement, who requires continuous bed-treatment, is noisy, will not remain in bed, and resists all attempts at keeping him there. To such a 4-minim dose of the tincture on a lump of sugar as a rule has an excellent effect. It removes irritability and fractiousness in a most marvellous manner, and, while not acting as a hypnotic, keeps the patient quiet and manageable during the day.

The acute maniac will often benefit from the drug

when all else has failed. Given as the tincture in 30-min. doses, combined with 30 grs. of bromide of potassium, it works wonders, producing quiescence in a short time.

It produces no cardiac disturbance, and does not interfere with the appetite or digestive functions.

Each of the drugs of this class has its own particular effects, respective advantages and disadvantages, and experience alone can guide one as to which should be used in cases requiring a general sedative.

PART II.—PURE HYPNOTICS.

The most frequent and the most dangerous symptom in the early stages of insanity is sleeplessness, and this must in nearly every case be combated by the use of drugs. A word of warning, however. Frequently cases are admitted into asylums, the relatives of whom state, with the utmost persistence, that the patient has not slept for over a week. I have, however, found so many of such patients sleep soundly on the first night of admission that I rarely pay any attention to such statements, and allow the patient to go sleepless for three or four nights before administering an hypnotic, very often with the happy result of ten to twelve hours' sound sleep on possibly the second or third night.

This natural sleep I consider to be well worth the waiting for. Nature asserts herself, and the patient awakes refreshed in both body and mind. Subsequent treatment re-establishes the habit which was broken by mental trouble. However, it frequently happens that one has to have recourse to the pharmacopœial armamentarium.

Under the heading of pure hypnotics, paraldehyde takes the place of an easy first. Together with it I group such drugs as alcohol, veronal, and chloral.

Paraldehyde is a colourless liquid of peculiar odour and pungent taste. Its disadvantages are such that it is not used to any great extent in general practice. I refer to its disagreeable taste and smell. Being volatile, and excreted to a large extent by the lungs, the latter is perceptible for many hours after its administration, and the patient for whom it has been prescribed can with ease be

picked out of a crowd. This disadvantage is not of course so apparent in asylum practice, but its taste has its decided drawbacks. A patient will rarely take a second dose of paraldehyde by the mouth, and recourse has to be had to the tube either nasal or œsophageal.

I have tried to disguise its taste in syrups of high flavour—aromatic tinctures and wines—but always with the same result—refusal.

Dosage.—The pharmacopœial dose of paraldehyde is given as from 30 to 60 mins., but amongst the insane this has to be largely increased. It is a drug which exemplifies the rule that small doses excite a function, but large doses paralyse. Given in 1-drachm doses its effect is not unlike that of opium, which in small doses is a cerebral stimulant, but in large doses a hypnotic.

For this reason I never give less than two drachms as an initial dose, frequently going to four and six drachms, and in selected cases even one ounce. It is a cardiac stimulant, and does not seem to be followed by the depressing effects of alcohol. On the other hand, its effect is increased and its action hastened by being administered with equal parts of brandy or whisky. It seems strange that this should be so, but I have proved it in numbers of cases.

Paraldehyde, administered in such a manner, rarely fails to produce the desired effect within fifteen minutes, the result being a condition which stimulates natural sleep to a most satisfactory degree. The patient's slumber is dreamless and unbroken, and he wakes refreshed, with a mental condition which is much improved, and very often with an appetite for food which was previously lacking. Such are the advantages of paraldehyde, for which, as an hypnotic, I have discarded most of the drugs which are used as such.

Alcohol.—In the form of whisky or brandy alcohol is extremely useful among a class of patient which is unfortunately a large one. I refer to the senile dement, so advanced in years that they live entirely in the past. Under our existing lunacy laws they form far too large a portion of our asylum population. They are as a rule

noisy at night, irritable in temper, and difficult to keep in bed. Delusions of wealth and persecution, with sometimes hallucinations of hearing, render them suspicious to a degree, and, therefore, difficult to manage.

To such the administration of one ounce of whisky toddy almost invariably sends them off to sleep, and, with careful prevention of dozing during the daytime, the repetition of the dose can be easily limited to once a week, thereby keeping down expenditure.

Veronal.—This drug is a very recent addition to our list of hypnotics, and up to the present it has proved to be a good one, with, however, the one great disadvantage of expensiveness, which precludes its use in large quantities among our pauper lunatics.

It is in appearance a crystalline powder, tasteless, inodorous, and freely soluble in hot water.

Dosage.—As in most hypnotics, this requires regulation. It is well to commence with an initial dose of 10 to 12 grs., watching its effect, and increasing or diminishing the quantity as required. It is best given in about two ounces of as hot water as the patient can stand. It is well to wait two hours at least before repeating the dose, as its cumulative action is undoubted, and its slowness of action deceptive.

In some of our medical literature of recent date several writers have contributed words of warning in reference to the drug. In the *British Medical Journal* of Dec. 17th, 1904, I notice a case of more or less collapse into a comatose condition following the administration of three doses of 10 grs. each at intervals of one hour. In the same journal of a week's later date is recorded in one case a rash resembling urticaria following its use, and in another erythema with considerable local œdema and swelling, and leaving behind measly stains. In each of these cases the dose was only 10 grains.

Personally I have not, although using the drug rather freely for experimental purposes, had any ill effects, except perhaps some slight ataxy and inco-ordination of the muscles of the extremities. This quickly passed off on discontinuing the drug.

Veronal is of service in the sleeplessness which is one of the most prominent symptoms in the early stages of melancholia. Such cases benefit considerably from a dose of 10 to 12 grains given at bedtime. The result is a quiet sleep, similar in all respects to that of nature, and leaving no ill effects, such as headache, giddiness, or languor. On the contrary, the patient seems refreshed and invigorated to a degree not found in any other drug of the same nature.

In cases of mania the drug is practically useless, its slowness of action putting it out of court. Such cases indicate paraldehyde, which gives, as a rule, sleep in from five to ten minutes.

To sum up, veronal is a useful addition to the dispensary of a private asylum. Its action is fairly certain, if the case be carefully selected, and it has none of the drawbacks of paraldehyde, since it is pleasant to take, does not upset digestion, and leaves neither headache nor disagreeable sensations in the morning.

Chloral Hydrate.—A crystalline substance, soluble in equal parts of water, odourless, but of a sharp, pungent, burning taste.

Dosage.—15 to 20 grs., but, like most other hypnotics among the insane, it requires a much larger dose to produce the desired effect. Its disadvantages are: (1) its taste, which is best disguised by being dispensed with equal parts of liquid extract of liquorice (B. P.). 2. It has a marked tendency to inculcate a habit of craving, which shows itself in a lack of mental inhibition and a general lowering of the whole nervous system.

The class of case most suitable for its exhibition is the acute alcoholic, verging on delirium tremens. To such chloral hydrate, grs. 15, combined with an equal dose of one of the bromides, acts as a quick and powerful hypnotic, calming excitement, putting to flight distressing visual hallucinations, and producing sound sleep within a short period.

Epileptics are undoubtedly the most troublesome and dangerous class of patients in asylums. Irritable, quick-tempered, and magnifying every grievance to its utmost

extent, they are, as a rule, found to be the cause of every disturbance in a dormitory. Once roused, pacification is difficult, and they usually require an hypnotic. Chloral, prescribed as above and given by tube, gives the best results.

The danger of inducing a habit does not obtrude itself in either of these classes of patient, as its exhibition is not necessary in the same patient for any length of time.

In the status epilepticus, chloral is a sheet anchor. Given per rectum in double the ordinary doses it is an invaluable rest-giver and saviour of life.

PART III.—DIMINISHERS OF REFLEX IRRITABILITY.

The first and most largely used drugs of this class are the bromide salts of potassium, sodium, and ammonium, which may be either used separately or in combination, as experience of a case teaches one. I need not enter into a description of these, as they are too well known to require such.

In Part II., referring to chloral hydrate, I have stigmatised the epileptic as being the most troublesome class of patient in an asylum ward.

Epileptics are at all times (1) irritable and impetuous, (2) are generally full-blooded and plethoric, and are (3) remarkable for their eroticism and desire for sexual intercourse. The bromides, although their therapeutic action is obscure, undoubtedly act in a palliative manner towards each of these symptoms. They diminish the irritability of the cortex of the brain, they lower the capillary blood-pressure and diminish the sexual desire. It should be carefully kept in view that not only are epileptics subject to frequent recurring convulsive seizures, but they are also very often maniacal before or after such seizure, and, what is more dangerous still, an attack of acute homicidal mania may take the place of a fit.

Without the bromides to aid us I am sure that not only would our death-rate be much higher, but also many serious accidents would occur, and it is imperative to make use of them among our epileptic population, which is, as a rule, a fairly large one.

The bromides should be administered regularly, as the treatment must be continuous to do any good. It is astonishing to note the increase in the number of seizures when our stock of bromide has by an oversight become exhausted for any length of time. A refractory ward in which epileptics are generally located becomes a minor pandemonium. The nurses are busy from morning till night attending to patients having fits, and black eyes and cut heads become the order of the day.

Of the three salts mentioned above that of potassium is the one used in most asylums. It is freely soluble in cold water, and when in solution has a peculiar salty taste. It is at first disagreeable to take, but the patient quickly becomes so conscious of its effects in warding off his trouble that no difficulty is found in administering it. On the contrary, he grumbles if he does not get his medicine regularly.

Dosage.—The quantity required to saturate, but not to bromise, is the correct dose. This will vary in different cases, and must be found in each individual patient. From 20 to 30 grains given thrice daily after each meal will be the maximum. Bromism is easily induced in some cases, but the symptoms show themselves so unmistakeably that one is warned in time. The dirty tongue and disordered digestion, accompanied by mental stupor and confusion, are sufficient to order one to say, "Hold, enough!" One unpleasant feature of long-continued dosing with bromide is the well-known rash which disfigures most epileptics. The routine treatment for such is arsenic. I find ℥ii. of the liquor arsenicalis, B. P., to the ℥xvi. of bromide mixture sufficient to keep it in check. This rash may seem a minor matter, but there is no patient who is more prone to the vice of vanity than the epileptic. He (the male is the worse offender in this respect) is deeply distressed when such a rash appears, and gives the medical officer no peace of mind until something is done to remove it.

A little essence of peppermint added to your stock bottle of bromide is always appreciated by patients, and helps to disguise the taste admirably.

Of the other salts those of sodium and ammonium deserve a passing mention. The therapeutic action of all three is entirely due to the molecule of bromine, as we have no evidence that any other salts of potassium or sodium produce such effects as I have described.

Bromides of sodium and ammonium contain a greater proportion of bromine to each molecule than the potassium salt does, each being in about the proportion of 17 to 20 per cent., but the effect of each salt in asylum practice is much the same. The combination of all three has been much advocated, but, having tried each salt alone and the various combinations, I have fallen back on bromide of potassium as giving me as good results with less trouble than all three together. It is also cheaper. To sum up, the advantages of the bromides are as follows:—

(1) The number of fits and their severity is considerably decreased.

(2) The patient is much more easily handled. You can get an epileptic to work well under the influence of bromide, but not without it.

(3) The bodily condition of each epileptic always improves under the drug, weight increases with moderate doses, the appetite is improved, and the temperature goes up appreciably. The temperature of an insane epileptic is, as a rule, between 97° and 98° on admission. After a week's course of K. Br. it is found that the normal temperature is reached. This I have verified in very many instances, and it is an interesting fact.

The second drug which I place in this class is opium, which is not so largely used among the insane as might be thought. The chief reason for this lies in the fact that the indications for its use are far from clear, and it is always necessary to experimentalise on each patient in order to find out whether it suits them or does not.

Opium may be used either as the whole drug or in the form of its alkaloids—in other words, by the mouth or hypodermically. Personally I have entirely fallen back on the use of opium in the form of the tincture, and that in large doses. I have before stated that opium in small doses excites, while large doses depress, and this fact is

at no time more apparent than in the treatment of the insane melancholic of a certain age and type.

In my last asylum, situated in the Highlands of Scotland, I found that the majority of my patients were of the melancholic type. This I accounted for, whether rightly or wrongly, by the natural temperament of the people of this part of the country. Dour, deeply religious, and leading a life of hardship and privation, they came into the asylum in the proportion of two labelled melancholia to one of mania, or simple delusion. The total number of patients numbered roughly six hundred, and thus I had a large field for experiment.

Amongst them I found all types of the disease—passively resistant, silent, and noisy. After careful classification of patients and careful graduation of dosage I have arrived at the conclusion that only one type of melancholia derives any benefit from the exhibition of opium. It is towards the patient who, male or female, has passed the climacteric, and is, moreover, atheromatous prematurely, that opium acts most beneficially. Such patients are morbidly depressed, are restless, noisy to a degree in the expression of their misery, and frequently have active delusions of a distressing nature. They look miserable, wander up and down a ward wringing their hands, moaning and wailing at the top of their voices, and, in consequence, becoming a nuisance and intolerable to those associated with them. On physical examination of such patients I always found a pulse of high tension, with arteries thickened, elongated and tortuous, accompanied by an accentuated aortic second sound. From these signs I argued that the cerebral arteries were in a similar state, producing in the patient possibly cerebral degeneration, if not, at all events, irritation and consequent restlessness.

Opium is undoubtedly indicated in such cases. Its effects in large doses are a peripheral vascular dilatation, causing the capillaries of the surface of the body to become congested with the occurrence of a sense of warmth and sometimes profuse perspiration. There is at the same time a general lowering of the blood pressure. I have at the present time two such patients under my

care, who have benefited to a marked degree by a course of opium. They are interesting cases.

The first, a male, aged sixty years, a fine muscular and well-developed Irishman. He was on admission in a state of pronounced morbid depression. He looked wretched, could not remain at rest either by night or by day, and said he was the most miserable man that ever lived. He rarely spoke, and, having attempted his life shortly before, he was kept under careful observation. Curiously enough, he tried to commit suicide by taking an overdose of laudanum. He was atheromatous to a marked degree. I put him on tinct. opii ʒii to start, gradually increasing the dose minim by minim until he got ʒiv. in the twenty-four hours. This large dose he got daily for about a week with no ill effects, and then I gradually diminished the dose, as his condition improved to such an extent that he was able to do without the drug for long periods. He is now cheerful and bright, and takes an intelligent interest in himself and his surroundings. He has lost his delusions, and is a good worker in our garden. He is at intervals restless at night, but a small dose of opium once a fortnight sets him right.

The second case is a female, aged fifty-five years. She was a second admission, having relapsed about three months after her discharge, and was returned to the asylum as being a public nuisance.

She was a melancholic of the noisy type. She appeared to be absolutely miserable, sat in a chair rocking herself to and fro, and giving expression to her grief in no uncertain tone. She wailed from morning till night at the pitch of her voice, ceasing only at meal time. She could give no reason why she acted in this manner, and could conduct a conversation in a rational manner, being quite coherent, and expressing no delusions. She I found to be atheromatous and suffering from aortic valvular disease.

I adopted a similar course of treatment in her case with most beneficial results. She at the present time gets ʒvi. of tinct. opii about once a week, and is now a most useful patient in the asylum ward.

In both of these cases, although giving excessively large doses, I have not noticed any of the unpleasant effects usually seen. The appetite continued good, constipation was absent, and the general nutrition of the body did not suffer in the least, as was evidenced by the weekly weight report.

Whenever I have had recourse to the drug I have almost invariably preferred to administer opium as such than any of its alkaloids. The hypodermic syringe is, of course, a great advantage in treating an insane patient, giving as it does such great precision in the dosage. Nevertheless, the effects which I have wished to produce are the better obtained by the use of opium. It has a more pronounced effect on the capillaries of the body, and is, therefore, a better diaphoretic, it is more stimulating, and, above all, it acts more *evenly* in soothing the nervous system than morphin. For this last effect I particularly prefer opium.

I have up to the present being speaking of opium as used alone, and not in combination with any other drug. There is, however, a class among the insane who at certain periods require to be kept continually under the influence of a sedative. I refer to cases of recurrent mania, whose periods of excitement are as regular as the changes of the moon. They are not, I am glad to say, a very numerous class, so much so that I am always able to say, out of my five hundred patients, when each individual one of this type is due for an attack. When it does occur it is characterised by intense excitement and exaltation, an absolute disregard of personal injury, and frequently destructiveness of a most expressive kind. The attack often comes on suddenly and without warning of any kind.

For such patients I keep in my poison cupboard a stock mixture of the following:—

R. Liq. Morph. Mur.	-	-	min. 20
Chloral Hydrat.	-	-	grs. 20
Spt. Chloroformi	-	-	min. 10
Tinct. Card. Co.	-	-	min. 20
Aquæ ad	-	-	℥ss.

The attack lasts, as a rule, from four to five days, during which I give the above dose thrice daily after food, with the most beneficial results. The attack itself is cut short, the excitement lessened to a marked degree, the patient is less dangerous to himself and others, and is easily controlled.

In conclusion I may point out that, in common with all sedatives, it is of the greatest importance to watch carefully the effects of each increasing dose of opium, and above all, for obvious reasons, to make a careful examination of the urine of the patient both before and during the administration of the drug.

PART IV.—MOTOR DEPRESSANTS.

The drugs of this class of which I have had practical experience, and which are used in asylum treatment, number only two. They are in reality one and the same, each being derived from the same plant, *Hyoscyamus Niger*. The effects of the tincture of hyoscyamus and that of the alkaloid hyoscine are, however, so widely different, and the class of patient for which each is indicated is, comparatively speaking, so far apart, that they must be treated individually and not collectively.

Hyoscine.—It is in the use of this drug that the advantage of the hypodermic syringe is so apparent. Rapidity of administration is absolutely necessary in the cases that require hyoscine. The sudden and acute case of mania characterised by delirious excitement, violence to himself and others, noisiness, destructiveness, and motor impulsiveness of all kinds demands active treatment, and this is best carried out by the use of hypodermic injections of hyoscine. Such patients soon become exhausted to a dangerous degree from the intensity of their excitement, and the case quickly resolves itself into one of emergency, and the sooner this is recognised the better for the safety of the patient's life.

Dosage.—It is the safest course to follow the pharmacopœial dose—viz., 1-200 gr.—if the patient should be at all weakly, as marked idiosyncrasy is very common, and the effects of the drug are such that extreme caution should

be exercised in its use. Sudden heart failure is always to be feared after its administration, and although I often use it with benefit, yet I must honestly confess that I always do so with fear and trembling.

My first experience of hyoscine has made me very cautious. Previous to taking up asylum work I was resident in an accident hospital. I was called at 1 a.m. to admit a case of delirium tremens. The patient was a man of fifty years, strong, muscular, and full blooded—a coal-heaver by trade. He was in a condition of acute maniacal excitement, shouting, throwing himself violently about, and the subject of hallucinations of sight, which at intervals seemed to throw him into a state of terror, indescribable. He was, with the assistance of a couple of hall porters, given a hot bath, put to bed, and given a pint of hot milk by the tube. This treatment calmed him for an hour or two, after which he became absolutely unmanageable. Not caring, as a junior, to resort to drastic treatment, I telephoned for the senior resident house physician. On his arrival the patient was strapped down by bandages carefully applied to knee, ankle, and elbow joints, but even with this his muscular efforts were so intense that something further had to be done. I suggested 1-100 gr. hyoscine hydrochloride hypodermically, which, after a little demur, my senior administered. The effect was quickly apparent. The patient quieted down within fifteen minutes and fell asleep. All being well—as we thought—we retired to bed, but within the hour I was again summoned by an urgent message from the night nurse to say the patient was dying. I hurriedly got to the ward, and realising what had happened took my hypodermic case with me. I found the man in a state of collapse, sweating profusely, respiration almost suspended, and the pulse imperceptible at the wrist. I at once administered 1-32 gr. of strychnin hypodermically, ordered hot bottles to feet and sides, and commenced artificial respiration. This I continued for an hour, but the patient never regained consciousness, and died. This, my first experience of hyoscine, taught me a lesson never forgotten. I have no doubt that in this man, after his

long bout of drinking, followed by exhausting maniacal excitement, the vaso-motor system was very depressed, and the dose of hyoscine, which I now consider to be excessive, over-stimulated the heart's action, producing failure. Probably inhibitory action of the vagi was produced at the same time.

In my asylum work whenever I use hyoscine, which is not infrequently, I generally start with 1-200 gr., but have given as large a dose as 1-80 gr. with good results. It acts as a decided soporific and calmer of delirious excitement to a marked degree. Its after-effects are practically nil if due precautions are taken. The patient's heart should be carefully examined, and if any organic mischief is found on no account should the drug be used. General paralytics and cases of organic brain disease contra-indicate its use.

Tincture of Hyoscyamus.—This is a form of the drug which I very frequently use in combination with other sedatives, such as the bromides or chloral, and it is certainly most effective. Cases of what I call moral insanity are kept under control by its use. They are always of the female sex, and who have been sent to an asylum by their friends as being unmanageable at home. Their insanity consists of impulsive outbursts of temper and self-will, a rooted objection to doing what they are told, and if remonstrated with in the slightest way they proceed to prove their right to certification by smashing, tearing their clothing, bed-clothes, and even setting fire to anything they can lay their hands on. (This last symptom of pyromania is not uncommon.) Whilst showing all these symptoms they can converse in a most rational manner, and have a due perception of right and wrong. Their condition is entirely due to their up-bringing and the lack of a firm hand in youth. At the same time there is generally found a neurotic strain in the family history.

Such patients, when found to be getting out of hand and kicking against the rigid discipline of asylum life, are benefited considerably by a short course of hyoscyamus. The menstrual period is generally the time when they are at their worst, and I find a drachm or two

drachms of the tincture, shortly before bedtime, has a wonderful effect. Not that it acts as a sleep producer, but it helps to bring them over a troublesome period without undue excitement, and, further, has a marked depressing influence on the motor centres of the brain. Given in combination as a mixture for cases which require it more or less continuously I prescribe the following:—

R. Tinct. Hyoscyami	-	-	min. 30
Chloral Hydrat.	-	-	gr. 20
Sodii Bromid.	-	-	gr. 10
Syrupi Simplicis	-	-	ʒi.
Aquæ ad	-	-	ʒss.

This given thrice daily I find quite sufficient to transform a termagant into a useful and obliging patient.

CONCLUSION.

In writing this thesis I have entirely confined myself to the therapeutic use of sedatives and narcotics, not caring, from the immensity of the subject, to touch on such influences as manual labour, walking exercise, hydrotherapy, or hypnotism. No one who comes into contact with the insane can over-estimate the value of such, but even with such factors one has always, as I have before pointed out, to resort to the use of drugs at some time or other.

Exception may be taken to the number of drugs I have treated of as being too few, but it is my belief that no more are required in any asylum, however large, and even if this list was reduced to an even smaller limit it would be far more satisfactory in every way.

In closing I would lay down a few maxims which I have learnt from experience:—

(1) Give particular care and forethought as to what class of drug is indicated in each case.

(2) Having given your drug, watch its effects carefully and graduate your dose accordingly.

(3) Make frequent examinations into the physical condition of each patient under the influence of a drug, paying particular attention to the ratio between waste and repair, as shown by your weight book.

(4) Never use a pure hypnotic in the daytime.

(5) In cases of insomnia due to delusions of a visceral nature be always on the look-out for disease of the organ said by the patient to be the cause of the trouble.

(6) If at all possible, try to do without the use of drugs, as they all have, without exception, a deleterious effect on the tissues of the body.

ART. XI.—*Fracture of the Tibia.** By EDWARD H. BENNETT, M.D., F.R.C.S.I.; Surgeon to Sir Patrick Dun's Hospital; Professor of Surgery in the University of Dublin, &c.

I DESIRE to submit to the Surgical Section of the Academy an example of fracture of the tibia only, which is most exceptional in its character.

"It is" (writes Stimson) "quite rare for the tibia alone to be broken when the fracture is by indirect violence, for the force continues to act, if only for a moment, and breaks the weaker fibula all the more easily, and usually at a higher point than the tibia." Every collection of fractures of the leg bones contains examples of fracture of the tibial shaft remote from its articular extremities, in which the tibia alone has been broken by direct injury, and every surgeon has seen examples of these in practice. If the fractures are simple none are more favourable for surgical treatment, for they remain without displacement and unite without deformity. But oblique fractures of the central portion of the shaft, without accompanying fractures of the fibula, are, indeed, rare. The following case came under my care this winter, and I am able to place all the facts before the meeting in excellent skiagraphs by my colleague, Dr. Watson. I was obliged to get a picture of the skeleton of the entire leg, as some one might say that I had overlooked the possibility of a fracture of the fibula either very high up or very low down. With the picture of all the leg this idea is excluded.

* Read before the Section of Surgery in the Royal Academy of Medicine in Ireland on Friday, February 24, 1905.

A young girl, fifteen years old or thereabouts, active, and well-grown, was challenging a girl of her own age to jump from a loft window to the ground, a height of about ten to twelve feet. In the play that took place she was shoved and had to jump. She lit on the ground on her feet, and fell backwards sitting. She was able to stand up, but could not put any weight on the injured limb, nor walk a step. A man who lived close by handled the limb, and pronounced that there was no fracture. At the moment no deformity appeared, and no swelling of the limb had time to set in. The girl's mother put her on a car and brought her to hospital, which was only a very short distance off. The pain and loss of power indicated the existence of fracture, but no crepitus or abnormal motion in the length of the bone could be obtained. Presently, as doubt existed in the minds of the resident staff, the X-rays were put to work, and disclosed this rare fracture. Knowing my interest in these injuries, the case was very soon placed under my care, and I can present the photographs. The progress was uneventful, and the union was perfect in the ordinary time.



In the photographs of this injury the fracture occupies nearly four inches of the shaft almost at its middle, passing with great obliquity from above and without downwards and inwards. I place here for contrast a recent example of a fracture of the tibia only, a transverse dentate fracture, caused by a direct blow on the bone in the line of fracture, and I show also a good example of the perfect treatment of such an injury possible through the kindly aid of the unbroken fibula. My photograph of the bone, taken about five weeks after the accident, shows that aid of the fibula is just as efficient in the treatment of the oblique fracture as in the case of the transverse.

When an adult leaps for life, and lights on one or both feet, the heel bones in one or both feet may break, and, again, the head of the tibia may break after the manner of Heydenreich. Of both these injuries I submit examples, but of the oblique fracture of the shaft of the tibia from indirect force I possess only these skiagraphs as, with the history I have quoted, the sum of my experience.

ART. XII.—*A Case of Intestinal Obstruction by a Gall-stone.**

By T. E. GORDON, M.B., F.R.C.S.I., Surgeon to the Adelaide Hospital, and WILLIAM M. A. WRIGHT, M.D. Univ. Dubl.; Examiner in Clinical Medicine to the University of Dublin.

DR. WRIGHT supplied me with the following notes of this case:—

Mrs. F. F., aged seventy-three years; bore seventeen living children, and has been very healthy all her life, with the exception of two or three illnesses connected with child-bearing, one being an attack of abdominal inflammation and another of phlegmasia alba dolens. On the night of February 12th, 1904, she was taken suddenly ill with an extremely acute attack of pain in the hepatic region, accompanied by vomiting; this was relieved by hypodermic injections of morphia. Two days after the patient was distinctly jaundiced, and I had no doubt at the time the pain was due to the passage of a gall-stone. After the acute pain subsided, a good deal of tenderness persisted over the region of the gall-bladder for a month; her temperature was slightly raised, her tongue furred, her bowels constipated, her appetite poor, and, in fact, from February 12th until the middle of April she was not well, suffering from what I looked upon as a condition of slight cholecystitis, brought on by the discharge of the gall-stone. Early in May she seemed to be perfectly well, so far as any liver or stomach trouble was concerned. On the 3rd of June she got an attack of phlebitis in one of the superficial veins of her right leg, which completely disappeared before the end of the month, and again she seemed quite well. On Saturday evening, the 6th of August, I was sent for and found her suffering from intense pain in the pit of the stomach. This had begun the evening before as a sensation of fulness, which had gradually increased until it became acute pain. Her son, who was a medical man, and staying in the house, had given her twenty-six drops of Collis Browne's chlorodyne without effect. I gave her $\frac{1}{4}$ gr. of morphia hypodermically, and ordered poultices to be constantly applied. I also left a dose of 30 minims of nepenthe, to be taken if the pain was not better. I was sent for early the following morning, as she had had a wretched night—sleepless, retching, and in constant pain, which none of the opiates had relieved. I found her looking very anxious; there was no rise

* Read before the Section of Surgery in the Royal Academy of Medicine in Ireland on Friday, December 2, 1904. [For the discussion on this paper, see Vol. CXIX., page 219.]

of temperature, and no sign of any tenderness or tension in any part of the abdomen, but while I was standing by her bed she said she felt sick, and at once vomited, the discharge being so copious and expelled with so little effort that I felt convinced there was some obstruction of the bowel, and told her son I should like to get a Dublin surgeon to see her with me. I then gave her $\frac{1}{2}$ gr. of morphia hypodermically, with the result that before I left the house she had dropped into a profound sleep. At three o'clock that day I met Mr. William Taylor in consultation. The patient awoke from the morphia sleep just as we came into the house, so that the last dose had given her six hours uninterrupted rest. She told us she "felt ever so much better, not a bit sick," and she took a little freshly made tea without any return of the vomiting. Mr. Taylor examined her abdomen most carefully, but could detect nothing to indicate where the seat of the mischief was, although it was somewhat distended with flatulence; the walls were soft, and there was no sign of tenderness or tension. We decided there was no indication for immediate operation, but that it was better to wait and see what medical treatment would do for her, as it seemed probable that all her symptoms might be due to the passage of another gall-stone, and that the acute stage of the attack had passed. That night I gave her a five grain dose of calomel, followed by a copious turpentine, soap, and water enema in the morning, but without result. On the 8th and 9th she seemed fairly well, although feeling nauseated. There was no vomiting or further increase in the abdominal distention, no tenderness or tension to be noticed anywhere, but there was absolute constipation. On the 10th of August I got Dr. Lennon to see her in consultation. That morning, before he came, she had brought up without effort some mouthfuls of that inky black vomit one sees discharged from the stomach in bad abdominal cases. He also examined her very carefully, and expressed a hope, as he could not detect anything definite in the abdomen, that the vomiting and constipation might be caused by faecal accumulation, and suggested copious enemata to be administered by the long tube every three hours. Of these she received four without any result whatever. During that night she several times brought up six or eight ounces of ster-
coraceous vomit, and on the morning of the 11th I felt that if we were not able to relieve her by an operation she would certainly die, and that soon. I therefore telephoned to Dr.

Lennon asking him to come and bring Mr. Gordon with him (as Mr. William Taylor was out of town) prepared to open the abdomen at once should we decide that such a course was justifiable. Drs. Lennon and Gordon came at 4 p.m., and the latter will relate the surgical notes of the case. From a medical point of view I may give a brief *résumé* of her illness as follows:—

In February a distinct attack of biliary colic, followed by an inflammation of the gall-bladder, which subsided only after two months. An interval of apparently perfect health, as far as abdominal symptoms were concerned, from April to the 6th of August; then intense pain over the liver, followed by complete intestinal obstruction, but with no fever or sign of tenderness or tension in any part of the abdomen.

When I saw this lady with Dr. Wright and Dr. Lennon it was clear that she had an intestinal obstruction. The abdominal distention, complete constipation, and fæculent vomit were conclusive evidence. The question was whether an operation offered a reasonable chance of recovery. We decided it would, because, although very ill, the patient did not present the aspect of extreme toxæmia.

On opening the abdomen in the epigastrium some peritoneal fluid escaped—sufficient in amount to explain a dulness in the flanks which we had previously noticed. I first examined the gall-bladder region, and found there firm adhesions, and this evidence of long past peritonitis was present in other parts of the abdomen. I specially noticed a strong band which tied down the omentum to the pelvic viscera. Fortunately this band did not add much to the difficulties of the case, for I was able to turn out the omentum sufficiently to bring the transverse colon and small intestine into view. The colon was contracted, the small intestine moderately dilated, and its walls congested. I drew out the latter, following the direction of most congestion, and within the first foot of the bowel, thus exposed, I came upon an impacted gall-stone. I removed this through an incision, which I then sutured. Before sewing up the abdominal wall I made a knife puncture in another part of the small intestine, which was specially distended, and allowed a quantity of foul intestinal matter to drain away.

I wish to draw special attention to the state of the bowel at the site of the stone. As you look at this stone you will be struck

by its small size. There would appear to be no difficulty for such a stone to pass along the small intestine. As a matter of fact, it was firmly impacted, and was causing complete obstruction. We observed two structural alterations in the wall of the gut. First—When the incision was made there was no pouting of the mucous membrane; it was as though the intestine had been crushed by a Doyen's forceps before its division. Second—We found considerable difficulty in suturing; owing to the friable condition of the tissues the thread repeatedly tore out. That small stones may cause intestinal obstruction is well known (*vide* Treves' "Intestinal Obstruction" and Mayo Robson's "Diseases of the Gall-bladder and Bile-ducts").

After the operation all vomiting ceased (I should have mentioned that we washed out the stomach at the conclusion of the operation), and the patient was able to leave her bed within a fortnight.

The various phenomena of this case do not admit of certain explanation. Three stages in the course of the illness are fairly clearly defined.

First, *a stage of onset*, lasting from the evening of August 5th to the morning of August 7th, marked by intense pain in the epigastrium, retching and vomiting, without fever or local tenderness.

Second, *a stage of quiescence*, with absence of vomiting or even feeling of sickness. This continued throughout August 7th, 8th, and 9th, and it was on the first of these three days that the patient was seen by Mr. W. Taylor.

Third, *a stage with unequivocal signs of intestinal obstruction*, especially fæculent vomiting. The first sign which marked the onset of this final stage was "that inky black vomit one sees discharged from the stomach in bad abdominal cases" (I quote Dr. Wright). This occurred on the morning of August 10th, and the operation was performed at 6 p.m., August 11th.

The chief interest and all the difficulty belong to the first and second stages. Were the early symptoms due to the passage of the stone from the gall-bladder to the duodenum by way of a fistulous opening? Again, was the stone impacted when Mr. Taylor saw the patient on August 7th, or did complete obstruction set in only with the return of vomiting on the 10th?

In attempting to answer these questions one naturally turns to the history of other cases of gall-stone obstruction. From such a study one learns:—

1. That the passage of a large gall-stone into the intestine is usually marked by the signs of a local peritonitis, including tenderness and fever.

2. That the passage may be accomplished without causing any symptoms, or symptoms too slight to raise a suspicion of the event.

3. That it is quite the rule in these cases for an interval to occur of variable duration between the supposed date of escape of the stone and the onset of the intestinal obstruction.

In the present case I think the severe onset pain was due to the escaping stone. The absence of fever and of local tenderness is a difficulty, but it is met by the second fact (if it really is such) to which I have just alluded—*i.e.*, that a fistula may form and a stone pass into the intestine without any symptom.

In the quiescent period, in which the patient was seen by Dr. Wright and Mr. Taylor, I do not think there was any obstruction. If the stone had been impacted as I saw it at the operation it is inconceivable that vomiting and nausea could have so entirely ceased. This is the more unlikely, seeing that the calculus occupied not, as is more usual, the lower part of the ileum, but a position probably very high in the jejunum.

Of the third stage I have nothing special to say. Spasm is obviously an important factor in its production.

The treatment of these cases is, fortunately, easily described. If you *can* make the diagnosis—operate! If you *cannot* make the diagnosis—operate!

THE UNITED STATES PHARMACOPŒIA.

THE eighth Decennial Revision of the Pharmacopœia of the United States of America will be official from September 1, 1905. Drs. Reid Hunt and Murray Galt Motter have prepared an important "Bulletin" of the changes in the new edition. This Bulletin was officially published on August 1, 1905.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Diseases of Society (the Vice and Crime Problem).

By G. FRANK LYDSTON, M.D. Philadelphia and London :
Lippincott. 8vo. Pp. 626.

Poor Jim Stephen's

Republic of the West,
Enlightened, free, sublime,
Undoubtedly the best
Production of our time,

does not seem to generate a very profound respect in her children, neither—unless the account before us is very much overdrawn—would she appear to deserve such feeling. The diseases from which the body, social and politic, are suffering in the land of the free are corruption as abominable as that of the olden Lucca, injustice unerring in its precision as a Mauser bullet, and a general unprincipled, frivolous and cynical disregard of public duty by everyone to whom any public responsibility is committed, such as could not be surpassed by any County Council in Connaught. Municipalities that traffic in harlotry, policemen who live on blackmail, judges who mock at a jury which brings in a true verdict of guilty, pointing out to its members that they included quite enough of the prisoner's friends to enable them to bring in an acquittal; respectable elderly merchants who normally regard the interior of the Chicago brothels as one of the most interesting sights to show to friends from the country, ladies who habitually produce abortion that they may not be troubled with squalling children; nay, even decent family men who bring their growing boys to houses of ill-fame to "make men" of them, are surely very unpleasing features in the development of Time's mightiest offspring. The writer's attention, as we gather from the preface, would appear to have been first drawn to criminal anthropology by the results of a murder trial in Chicago five-and-twenty

years ago, at which two young men were condemned to be hanged for an offence which can only have been committed by one of them. The frontispiece of the book, however, is not a portrait of the judge who passes this sentence, or of the hangman who executed it, or of the foreman of the free and enlightened jury which brought in the verdict, but is a representation of a sagittal section of a very thick skull of a negro murderer. When one attempts to follow the steps of the *sorites* of arguments and proofs where-through our author presumably arrives at his very elliptically-stated conclusions, one finds the process so difficult that one hopes one's skull may not perchance be knaved out of one's grave (as old Browne says) to betray to future generations its excessive thickness. Other horrid apprehensions are aroused by some of the language used in this work. We do not complain that the book is not written in English. Many references to the degenerate autocracies and aristocracies of the Old World render it perhaps inevitable that the language used should be that of the New; but oh! dear, dear, what is a "half-baked hoodlum"? The context precludes the notion that he can be a hodman, half-cooked in Judge Lynch's cleansing fire. Imagination boggles at the thought that one might be oneself a half-baked hoodlum without knowing it. Dreadful fate! But supposing that a half-baked hoodlum should turn out to be a half-educated author, whose style is borrowed from the "captions" of the Yellow Press, who strings together a multitude of confident statements without troubling himself to reason any of them out, or even to see that they are decently coherent, we think we could oblige our readers by pointing out a specimen. Our author tells us that one of the functions of the scientific criminologist is "to reduce the subject to a material, scientific, and, so far as possible, evolutionary basis," but a few lines later we are warned that "too much must not be expected from advanced ideas." Again, "punitive, corrective, and repressive legislation has hitherto failed absolutely," but "modern criminology is paying its attention chiefly to the body of the criminal," and, in the name of all that is wonderful, what else did the punitive, &c., legislation do? We sub-

mit, it devoted the greatest attention to the body; it hanged the body if the hand had picked and stolen to the value of five shillings; it hung (but not to death) and drew and quartered the body if the head had plotted treason against the State; for numerous trifling and some grave offences (debt, among the latter) it often condemned the body to life-long incarceration under circumstances very unfavourable for propagating the race, and thereby must have tended greatly to diminish crime, if the somewhat obsolescent theories to which Dr. Lydston adheres are correct. Nay, that stickler for physical methods, William Rufus, went even so far as to castrate his vanquished enemies, a measure to which Dr. Lydston—evidently believing it to be advanced and modern—is theoretically partial. We are informed that “the various phases of social evolution are familiar to every student of history.” The long exploded Manchester school used to talk like this; so did the early Comtists. Unfortunately they meant quite different things. At any rate, nobody believes in either of them now. But to test our author’s bold assertion, we should like to have his views, as Mr. Pecksniff says, on the march of civilisation in Abyssinia, on the development of the Danubian principalities, or, if he prefers a topic bristling with points of artistic and literary interest, let us hear what he has got to say on the history of the Italian Republics. How many books have been written on the evolution of Florence? How many students of history are familiar with that subject yet? In this confident assertion, however, obviously framed merely with an eye to very limited and local views of history, we discern that tendency to parochial judgments which Dr. Lydston constantly exhibits.

“There’s livers out of Britain,” and even out of Illinois, and though Chicago be as wicked as its citizens proudly boast, yet in a world-competition it may be that Babylon would run it close, and we might conjecture that Sodom and Gomorrah would have an easy win.

Returning to our author, we learn that “the assumption that the criminal, in particular, is a product of

evolution, is in absolute harmony with the evolutionary theory in general." It is difficult to say what this vague sentence means. The common notion of evolution assumes that the evolution of the human race has been and is and will be upwards. We see no particular reason in the history of the past why man should not become as distinct as the diplodocus, and perhaps the evolution of crime may be an agency in that direction, but we doubt whether this is what is meant. The undoubted moral corollary of the theory of development is the axiom "Whatever is, is best." The arguments on this side are obvious. They may be even applied to atavism, since unless we at once prepare to assume a dualistic attitude, atavism must be under the same laws as everything else.

However, on the main question of how to deal with crime, it seems little use arguing, because "it has been shown by the statistics of Great Britain and France that there is a constant proportion in the ratio of criminal acts to the number of population in these countries." If this be so, the remedy for crime is obvious—destroy the population, or adopt the method which our author humanely suggests as a substitute for lynching in dealing with negro "rapists." Nothing less would have any promise of efficacy.

So large a book on so interesting subjects could scarcely be written without containing much that is worth reading, and much, perhaps, that is true and sound, but the author's flashy style is irritating, while his lack of consecutive thinking robs his pronouncements generally of serious value. He is like a small boy to whom somebody has presented a knife—he slashes round and cuts everything. With an assumption of infallible wisdom he lets fly a sentence here and epithet there at every sort and condition of man or of human interest. He is quite unable to resist the glamour of a phrase that may "tell," and in a virtual or actual parenthesis he often contradicts the main thesis of a passage with no other apparent object than to make "copy." The new woman and the old man, Calvinism, trial by

jury, General Booth, and even the sacred George Washington, get a casual slap. The most cherished institutions of the New World share with the effete customs of the Old in a sort of universal reprobation, if so solemn a name can be given to penny-a-liner wit. What are we to say of the taste of a writer who, in a serious passage, talks of Justice as "the Lady with the Blinders"? What of his knowledge of the proprieties of language, who writes: "morals has changed"; "in some States bastardy is a crime"; or "seduction under promise of marriage, without its consummation, is comparatively exceptional."

Dr. Lydston laughs at some of Lombroso's absurdities, and we are not unwilling to join him. He speaks with well-merited contempt of the puerile panaceas proposed for crime by some social reformers. Yet what can be really more childish than his own notion that prostitution may be checked by giving youth "sound ideas of sexual physiology"?

Amidst much extravagance and much inconsequence, our author, we are glad to note, shows considerable courage in attacking both Trusts and Trades Unions. Here the earnestness of his feelings, and perhaps the fact that he has few authorities to refer to, have borne him away into an unadorned mode of speech and a straightforwardness of thought that he hardly shows elsewhere. We know little of Trusts in this country, but we commend Dr. Lydston's book to those who wish to realise how hideous and antisocial a tyranny the other scourge of civilisation may become in countries where dishonest State and Municipal Governments sell their own consciences and the public interest to secure the votes of Trades Union wire-pullers.

Bulletin of the Ayer Clinical Laboratory of the Pennsylvania Hospital. No. 2. Issued January, 1905.
Pp. 70.

IN this fasciculus four papers are contained. The first, by Warfield T. Longcope, the Director of the Laboratory,

is entitled "A Study of the Bone-marrow in Typhoid Fever and other Acute Infections." The close relationship existing between certain cells of the hæmopoietic organs and the cells of the circulating blood give much interest to an examination of the bone-marrow, lymph glands, and spleen in acute infectious diseases. In this work Dr. Longcope gives the results of a comparative study of the bone-marrow in typhoid fever and other acute infections—pneumonia, peritonitis, chronic nephritis, tuberculosis, &c.—combined with a study of the leucocytes in the circulating blood in these conditions. In twenty-six cases of typhoid fever the bone-marrow showed certain definite and constant histological lesions, which resembled closely the changes seen in the mesenteric glands, lymphoid follicles of the intestine and spleen. They are characterised by the presence of many lymphoid cells, large phagocytes and foci of necrosis. There was more or less hyperplasia of the blood-forming cells. In many of the marrows from cases dying of perforation peritonitis there were, besides the disseminated foci of necrosis, diffuse degenerative changes in blood-forming cells, accompanied by marked œdema and congestion of the tissues. Differential counts of the bone-marrow cells showed a marked relative increase of the lymphoid cells over the granular myelocytes.

In fifteen cases of acute lobar pneumonia, four cases of peritonitis, one of acute cerebro-spinal meningitis, one of retro-peritoneal abscess, and one of puerperal septicæmia, the bone-marrow showed the same kind of alteration, which differed in many respects from that observed in typhoid fever. There were extensive hyperplasia of the blood-forming cells, with a marked relative increase of the granular myelocytes over the lymphoid cells. Unlike the cases of typhoid perforative peritonitis, diffuse degenerative changes were absent. In no cases of this group were foci of necrosis found. Large phagocytic cells were rare or absent. In four cases of chronic nephritis and one of carcinoma of the gall-bladder no distinctive pathological alterations were found in the bone-marrow.

It is thought probable that the lesions found in typhoid

fever are related to, and perhaps responsible for, the hypo-leucocytosis characteristic of this disease, while those found in the other cases are in close association with the hyperleucocytosis found in pneumonia, peritonitis and the other diseases studied.

This interesting paper is illustrated by two well-executed plates.

In the second paper Dr. Williams B. Cadwalader studies "The basophilic granulations of the erythrocyte in lead poisoning and other conditions, with special reference to the relation which they bear to the nuclei of the red blood corpuscle." The following are the author's conclusions:—

"1. Basophilic granulations occurring in erythrocytes are normally present in small numbers in the blood of man, but may be increased in numbers under certain pathological conditions and decrease as convalescence is established.

"2. Nucleated red corpuscles are common in the blood of those suffering from lead poisoning, and are always accompanied by an increase in the number of granular red cells.

"3. The anæmia secondary to lead poisoning, as a rule, is only of moderate degree.

"4. The granular cells are most common in lead poisoning, possibly have their origin in the blood-forming tissues, and are probably the results of a fragmentation of the nucleus of the red blood corpuscle."

To this paper also there is appended a good coloured plate.

"The relation between congenital malformations of the heart and acute endocarditis, with report of two cases," is the title of the third paper. In this work Dr. G. Canby Robinson, from his own cases and from a study of seventeen other carefully recorded cases, the particulars of which he presents in a tabular form, arrives at the following conclusions:—

"1. Congenital malformations of the heart are generally considered to predispose to acute endocarditis.

"2. The fact that the combination of acute endocarditis

and congenital cardiac malformations is rare is because comparatively few cases of congenital cardiac malformation reach the age at which acute endocarditis is most common. Most cases showing both pathological lesions die in young adult life.

"3. The form of extensive congenital cardiac malformation which is most frequently attacked by acute endocarditis is that in which life is most prolonged—namely, obstruction to the pulmonary outflow with openings between the auricles or ventricles. (Both the writer's cases are of this nature.)

"4. The acute endocarditis more frequently attacks the right side of the heart in cases of congenital cardiac malformation."

Four plates illustrate the appearances in the cases described in the text.

The last paper is "The report of a case of malignant tumour of the testicle resembling chorio-epithelioma, with metastases," by Drs. J. A. Scott and Warfield T. Longcope.

In the patient, aged forty-five, both testicles were undescended. The tumour was on the right testicle. In the retro-peritoneum large masses were found of similar structure to the primary growth. These masses had grown into the inferior vena cava, from which dissemination had taken place in the lungs and nearly every other organ of the body. In the primary tumour neither the remains of the testicle nor any of the usual structures seen in a teratoma could be discovered. There was only one variety of growth, the vast majority of the cells of which resembled closely the Langhans cells of the chorionic villi, while here and there a few multi-nucleated cells or syncytial masses were seen. The metastases were identical with what Marchand has termed the "typical form" of chorio-epithelioma.

The explanation of these tumours is difficult, and has given rise to different theories. Schlagenhauser thinks that teratomata may arise either from isolated blastomeres or from fertilised polar bodies. In the latter case it is possible that during the development of the tumour foetal membranes may be formed, and from the cells of these

membranes this type of tumour arises. Thus, in their origin, these growths are the same as the chorio-epitheliomata of women.

Risel, on the other hand, thinks that the chorio-epitheliomatous masses should be regarded as a form of embryonic epithelium arising from the epiblast and analogous in its origin to the other epithelial tissues; hence, though resembling in structure the true chorio-epitheliomata, they are in origin quite distinct. At first sight the present case seems to accord best with Schlagenhauser's view—"But another explanation is also possible. If certain chorio-epitheliomatous masses embedded within a teratoma composed of all three germinal layers developed in advance of the other elements, these latter structures might come to have a subsidiary place and finally form an insignificant part of the whole. It is thus possible that the tissue having the structure of chorio-epithelioma might entirely out-grow the other elements so that they would disappear or be present in such small amount that without serial sections through the whole growth it would be impossible to determine their presence."

The histological appearances seen in one of the metastatic nodules in the kidney is shown in an excellent plate.

The Johns Hopkins Hospital Reports. Vol. XII. Baltimore: The Johns Hopkins Press. 1904. Pp. 549.

THIS volume of these admirable Reports contains eight papers, all of the highest interest and of great excellence. Some of them are of great length, sufficient to make a good sized volume. It is illustrated by twelve plates and fifty-four figures in the text. Our space does not permit us to do justice to the works comprised in this volume or to attempt more than an indication of the subjects treated of in the different papers.

I.—"The Connective Tissue of the Salivary Glands and Pancreas, with its Development in the Glandula Submaxillaris," by Joseph Marshall Flint, M.D. In this

paper the author studies, by the digestive method of Spalteholtz, the development of the salivary glands and pancreas, more particularly as regards the formation and arrangement of the connective tissue and the development of the lobular structure of the glands. The work is a very valuable contribution to science, and cannot fail to interest everyone engaged in anatomical or histological research. It is splendidly illustrated, and gives evidence of conscientious work and great ability on the part of the writer.

II.—“A New Instrument for determining the minimum and maximum Blood-pressures in Man,” by Joseph Erlanger, M.D. The instrument—of great ingenuity—is described and figured. Its great advantage over those previously employed seems to lie in the possibility of determining both the maximum and minimum pressures accurately and much more objectively than has hitherto been possible. “The maximum blood-pressure is determined by noting the pressure exerted upon the arm while the pressure upon the arm is slowly falling, at which the recorded pulsations show an abrupt increase in amplitude. The minimum blood-pressure is determined by noting the pressure exerted upon the arm when the recorded oscillations have reached their maximum amplitude.” The instrument has been carefully tested, both on men and animals and with an artificial schema of the circulation, and its accuracy demonstrated. Many interesting points in the pressures in the different arteries, the elastic resistance to compression shown by the naked arteries and by the tissues, have been established. The work is not only an important contribution to physiological technique, but furnishes a valuable addition to the means of medical investigation.

III.—“Metabolism during Pregnancy, Labour, and the Puerperium,” by J. Morris Slemons. Among other things it is shown by this research that during the later part of pregnancy water and nitrogen are stored in the body of the mother, and that a larger proportion of the nitrogen is eliminated as ammonia than is the case in the non-pregnant woman or after labour. These peculiarities in

metabolism are more marked when there is a twin pregnancy, and are lost if the child dies in utero.

IV.—“An Experimental Study of Blood-pressure and of Pulse-pressure in Man,” by Joseph Erlanger and Donald R. Hooker. This work, which runs to 235 large pages, considers blood-pressure and pulse-pressure under various physiological conditions, such as variations in intra-thoracic and intra-abdominal pressure, muscular exertion, posture, bandaging legs, baths, ingestion of food, &c. It includes also the effects of blood and pulse-pressure upon the secretion of urine, and the relation between blood-pressure and pulse-pressure and the output of urine in a case of orthostatic albuminuria.

V.—“Typhoid Meningitis,” by Rufus J. Cole, M.D. The localisation of typhoid bacilli in the meninges may cause two forms of meningitis, a so-called serous meningitis and a true suppurative meningitis. The former would appear to be more common than the latter. In this research is shown the great value, both diagnostic and therapeutic, of lumbar puncture in the study of these conditions.

VI.—“The Pathological Anatomy of Meningitis due to *Bacillus Typhosus*,” by W. G. MacCallum, M.D. This paper arises from the last. In it the author studies the conditions of the membranes, and more particularly the kinds of cells met with in the exudation into the meningeal sacs.

VII.—“A Comparative Study of White and Negro Pelves, with a consideration of the size of the child and its relation to presentation and character of labour in the two races,” by Theodore F. Riggs, M.D. The author finds “that in white women the pelves are low and broad as compared with the more narrow and relatively deeper pelvis of the negro; that contracted pelves are 3.74 times more frequent in the negro than in the white (9.25 per cent. to 34.82 per cent.); that the duration of labour is longer in (a) primiparæ than in multiparæ; (b) contracted than in normal pelves; (c) negroes than in whites; that the children of multiparæ are larger than those of primiparæ in both races; that children born to women

having normal pelves are longer than when the maternal pelves are contracted; that the white child is larger than the negro child by 1.5 cm. in length, 200 grams. in weight, and a few millimeters in the various cephalic measurements; that the size of the child is greatly influenced by the occupation and surroundings of the mother previous to labour; that there is no definite law governing the relation of the size of the child at term to the size of the mother's pelvis; that the higher the grade of the race the greater is the proportion of male to female children; that there is a higher percentage of vertex presentations among the negroes than among the whites; that there is also a higher percentage of spontaneous labours among the negroes than among the whites; that routine pelvimetry is an absolute necessity to scientific obstetrics."

VIII.—"Renal Tuberculosis," by George Walker, M.D. In 1,369 autopsies at the Johns Hopkins Hospital there were 784 cases in which tubercle was found in some part of the body. Of these there were 61 cases of renal tuberculosis. In six instances the process seems to have begun in some part of the genito-urinary tract, but in no case was a primary tuberculosis of the kidney demonstrated. The large proportion of tuberculous cases is explained by the fact that a routine microscopic examination of all the organs was made. The liver and spleen were about as frequently involved as the kidney. As in some instances when slight lesions were found in the kidneys no symptoms during life suggested renal tuberculosis, it follows that this process must advance to a certain degree before changes can be detected in the urine or disturbances of micturition occur.

From a study of his own cases and those published by other writers Dr. Walker concludes that the tubercle bacilli reach the kidney by three distinct routes:— (1) Most commonly, by the blood-current; (2) more rarely, by extension from neighbouring parts, principally from tubercular foci in the vertebræ; (3) only in exceptional cases, by extension upwards from the bladder. In most cases the bacilli are stopped in the glomeruli, and are

propagated from this point. They cause a hyperplasia of the endothelial cells lining the vessels, and, penetrating these, affect the surrounding connective-tissue cells, causing necrosis, and accumulation of leucocytes and of epithelioid cells. The bacilli may leave the glomeruli in three ways:—“(1) When fusion of the tuberculous area with the capsule occurs, a direct invasion is rendered possible; (2) they may pass into the small blood-vessels at the base of the glomerulus; (3) they may pass into the cavity of the capsule and down the tubules, where they lodge. Their transit into the surrounding tissue has been observed at the end of five days” (in the rabbit after inoculation). A minute description is given of the appearances seen in cases of (1) miliary tuberculosis; (2) chronic tuberculosis with the ureter patent; and (3) chronic tuberculosis with the ureter blocked. In discussing the much-vexed question of ascending renal tuberculosis the author concludes that before such an invasion of the kidney can occur there must be either an infiltration of the lower part of the ureter, so that it fails to become closed in the normal manner, or a definite obstruction in the urethra or at the vesical neck by the prostate. “In other words, there must be some change which causes a certain stasis of urine so that it remains in contact with the mucous membrane of the ureter or pelvis for some time.”

A detailed description is given of the best methods for the detection of tubercle bacilli in the urine and their discrimination from smegma bacilli. As regards the latter, no method seems quite reliable, and in doubtful cases inoculation of a guinea-pig can alone decide.

The author has made a large number of inoculations of tubercle bacilli into various parts of rabbits, but although he has obtained a large number of positive results he withholds their publication until the experiments shall have been carried further.

Under the head of ætiology some of the agencies predisposing to the infection of the kidney are considered. That trauma, such as contusion, is probably one of these is rendered probable both by clinical observation and ex-

periment. This is important as contra-indicating operative examination of a doubtfully affected kidney. Renal tuberculosis is most frequent between twenty and forty years of age—rather more frequent in the male than in the female sex, and on the right than on the left side. It is, however, very exceptional to find only one kidney affected.

The symptoms are divided into local and general. Of the former the most important are, in order of frequency, polyuria, with no abnormal constituents; the presence of abnormal constituents in the urine, pus, blood, and debris; disturbances of the bladder, frequent and painful micturition; pains in the region of the kidney, dull, continuous, or very sharp and paroxysmal; hæmaturia; the development of a tumour mass. All these symptoms are minutely described and their importance discussed. Hæmaturia is particularly noticed, and a general discussion of this symptom undertaken. Here so-called "functional hæmaturia" is considered, and a considerable number of cases of this description given, partly from the records of the Johns Hopkins Hospital, partly from other sources. Dr. Walker concludes that "clinical and pathological evidence renders it highly probable that bleeding from the kidney can occur in the absence of any definite lesion of the organ." The constitutional symptoms of renal tuberculosis are fever, loss of flesh, anæmia, sweats, vomiting, loss of appetite, and uræmia.

The section on Diagnosis is exceedingly full and valuable. To determine which kidney is involved cystoscopy is essential. If this gives uncertain results catheterisation of the ureters must be resorted to. The possible dangers of this procedure are considered, and shown to be very small. The author has never seen any damage follow ureteral catheterisation. The different separators which have been proposed for the collection of the urine from the two ureters without mixture are not very satisfactory. When nephrectomy is contemplated it is most important to determine the presence of a second kidney, and when this is established to test its functional capacity. The

methods for making this investigation by the passage of methylene blue, by the phloridzin test, by cryoscopy, and by the elimination of chlorides, are fully described.

Under the heading Prognosis it is stated "that the very best we can expect from nature, and then only exceptionally, is the arrest of the process after the whole organ has been destroyed." Hence a strong indication for early nephrectomy. The duration of the disease from the first symptoms varies between sixteen days and eighteen years. One kidney may be engaged for from one and a half to two years without infecting the other. The bladder is usually implicated within the first eight months.

The only treatment is surgical. Nephrectomy should be done as soon as the disease is detected unless there are other lesions which contra-indicate it. If the second kidney is affected, but not considerably, removal of the most seriously diseased gland sometimes is followed by improvement in the other, but complete cure never results. Tuberculosis of the prostate, seminal vesicles, testes or bladder does not contra-indicate operation if the condition of the patient is otherwise good, nor does pulmonary tuberculosis if in an early stage. In cases of very advanced tuberculosis of the kidney, where the whole organ has been nearly destroyed, and a large abscess has formed, a nephrectomy should always precede the removal of the organ.

It has been found that the mortality when the kidney is removed through the abdomen is 8 to 10 per cent. greater than when the lumbar operation is performed. The latter proceeding should, therefore, be adopted. The technique of the operation is fully described, and a modification proposed in order to avoid the danger of squeezing tubercular matter from the kidney into the blood vessels or lymphatics during the removal of the gland. This modification consists in first tying the vessels through the abdomen and then removing the gland through the loin. If the ureter appears sound it need not be excised, but if there is hardening it should be pulled up through the wound and cut off as low as possible. As in other organs,

when thrown out of use, tuberculosis in the ureter improves or gets well after removal of the corresponding kidney.

Notes of a large number of cases are appended to this important paper, and the work concludes with an extensive bibliography. Indeed, in all the papers issuing from the Johns Hopkins Hospital the careful and laborious way in which the literature of the subject of each communication is collected is a marked feature.

A System of Physiologic Therapeutics. A Practical Exposition of the Methods, other than Drug-giving, useful for the Prevention of Disease and in the Treatment of the Sick. Edited by SOLOMON SOLIS COHEN, A.M., M.D.; Professor of Clinical Medicine in Jefferson Medical College; Physician to the Jefferson Medical College Hospital, and to the Philadelphia General, Jewish, and Rush Hospitals, &c. Volume XI. Serum Therapy, by JOSEPH M'FARLAND, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College of Philadelphia. Organotherapy, by OLIVER T. OSBORNE, M.A., M.D., Professor of Materia Medica and Therapeutics at Yale University. Radium, Thorium, and Radioactivity, by SAMUEL G. TRACY, B.Sc. M.D., Radiologist, New York Skin and Cancer Hospital, Assistant Neurologist, Vanderbilt Clinic, Columbia University, New York City. Counter-irritation, External Applications, Bloodletting, by FREDERICK A. PACKARD, M.D., late Physician to the Pennsylvania Hospital. An Outline of the Principles of Therapeutics, with especial reference to Physiologic Therapeutics, by the EDITOR. With Addendum on X-ray Therapy, and Index-Digest of the Complete System of Eleven Volumes. Illustrated. London: Rebman, Ltd. 1905. 8vo. Pp. 388.

THIS concluding volume of a most instructive and interesting Cyclopædia rounds off with a characteristically exhaustive and well-arranged index of 126 pages. It is

hardly necessary to point out how very important a feature this is in the case of a work of reference constructed on so vast a scale, and presenting such intricacy of division and arrangement as does that before us.

This concluding volume deals with some of the very newest and most interesting of the contents of a series which, from the natural freshness of its lines of departure and the untrammelled originality of its methods and view-points, offers to the earnest student and practitioner the most fruitfully suggestive of latter-day additions to the armamentarium of the votary of the healing art. Yet in those very departments where there exists the greatest scope—and the most tempting opportunity—for theoretical speculation and unsubstantial faddism, the writers have limited their communications to matters proved by uncontrovertible tests. The editor justly claims that—"The authors of the articles on Serum Therapy, Organotherapy and Radiotherapy have been conservative in their treatment of the themes assigned to them. While discussing all important matters with sufficient fulness, and permitting themselves occasional glances into the future, they have made no recommendation that has not been substantiated by the test of time, and they have excluded whatever seemed to possess ephemeral interest only." We can, for our own part, after a careful scrutiny of those extremely well-written articles, fully corroborate this claim. And the fact that the borderland is so wide and so vaguely illuminated at present is the best preventive of the wanderings of the reviewer from the beaten track—or, at least, it should be. There can be no doubt on the mind of any thinking reader that a rapid evolutionary—if not quite a revolutionary—wave of thought has been recently set in motion from each of the above-named subjects as a nuclear source of disturbance. The Serum Therapy will pretty surely occupy a good share of the comment—or silent dissent—of the carping critic and the scornful sceptic for at least some few years to come. The subject of Organotherapy bears a historic stamp which recent discoverers do not seem at all desirous to expose to the gaze

of "the general." In the primitive—probably even prehistoric—ages of the healing art, before the dawn of the first recognisable traces of the sciences of chemistry or physiology, the idea developed in the crude intellect of our forefathers that the functional activity of a failing "organ" could be partially, if not completely, restored—from without—by the judicious supply of material of similar structure and physiological capacity. No suggestion was more superficial than the desirability of replacing a worn garment, or portion thereof, with a new one, or repairing its local failures by fitting subsidies of identical, or approximately similar, material. And so the practice was initiated, and steadily waxed in spirit and in stature—if not exactly in wisdom—down through all the ages of the supremacy of the faiths, and the emotions, and the safeguarded ignorances of growing humanity! And here in our own generation, when the convenient old atoms of Moschus and Democritus, and Epicurus, and Lucretius had been successfully Daltonised into their respective chemical pigeon-holes, and satisfactorily balanced and vouched for by the mathematical auditors of the various physical departments, comes in the unlooked-for and disconcerting *radiations* to blow the finally constructive *atoms* of our scientific parents into constituent particles of dimensions incalculably smaller still! Verily, verily, this is an age of scientific—as well as political—unrest! In this country, especially, we have reason for constant prayer that it may not all tend ultimately to the genesis of merely "devolutionary" results! We fully hope not; and in bright anticipation of the future of our own profession, and of the extension of its powers, we will close this notice by quoting the concluding paragraph of the editor's preface—including, as it actually does, a quotation from a contemporary critic of his work:—"One journal in its review of the system said: 'The era of a broadly conceived therapeutics, which includes, but by no means confines itself to, drugs, has evidently dawned.' It is the author's highest wish to be able to believe that his work has been a contributing factor in this result." With our parting

expressions of sincere congratulation on the completion of his great task, and hearty thanks for the personal pleasure and profit which we have reaped from the perusal of its pages, we feel that we can with the utmost confidence assure him that his wish has been gratified, and that the influence which his great factor has contributed will not be confined to his own generation or century.

Poisonous Plants of all Countries, and the Toxic Symptoms produced by each group. By A. BERNHARD SMITH. London and Bristol. 1905.

THIS booklet may be of some use for reference, but cannot be entirely commended. It contains several misprints and some curious errors—*e.g.*, that there are but “few solid” alkaloids, to say nothing of many erroneous definitions in the short glossary of botanical terms. On page 23, half-grain of atropin subcutaneously is recommended as an antidote to cardiac poisons. There are two coloured plates of poisonous fungi which, although somewhat coarsely drawn, would help in identification.

The classification of poisonous plants is adopted from Guy & Ferrier’s “Principles of Forensic Medicine.”

Errors of Refraction and their Treatment. A Clinical Pocket-book for Practitioners and Students. By CHARLES BLAIR, M.D. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co. 1905. Pp. 103.

“THE object of this little book is to endeavour to supply, in a condensed form, the more practical and clinical points in connection with errors of refraction, in the hope that it may be of use to some who are not able to give much time to this relatively uninteresting subject—a subject which is unfortunately too apt to be crowded out of general medical work.”

That the object has been attained in a very satisfactory manner will, we are sure, be the comment of all who read this very clearly-written and well-expressed little book.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

THE HENRY PHIPPS INSTITUTE FOR THE STUDY, TREATMENT, AND PREVENTION OF TUBERCU- LOSIS.

BY ALFRED E. BOYD, M.B., D.P.H.

THE First Annual Report of this Institution was reviewed in the number of this Journal for July; but some further details will be acceptable to our readers.

The Henry Phipps Institute in Philadelphia was founded on February 1st, 1903; its objects, as set forth in its charter, are "the study of the cause, treatment, and prevention of tuberculosis and the dissemination of knowledge in these subjects; the treatment and the cure of consumptives." The benefits are to be administered without regard to race, creed, or colour.

The founder of the Institute is Mr. Henry Phipps, who also maintains it. Clinical work was begun in temporary quarters in Philadelphia on February 2nd, 1903, the day after foundation. Bare walls and floors, a few chairs, a clerk and three physicians constituted the equipment at the start, and dispensary work and fitting up went on together for months in a well-built house, used formerly for tenement purposes, but which had been unoccupied for some years. As time went on order was evolved from chaos, and a complete organisation was brought into existence. At the end of the first year the staff of the Institute consisted of a medical director (Dr. Lawrence F. Flick), an assistant medical director (Dr. Mazyck P. Ravenel), nine physicians, two laryngologists, a neurologist, an ophthalmologist, and a dermatologist, while the building had been transformed into a hospital containing sixty-eight beds for patients, besides the dispensaries and other necessary apartments, the whole forming a fairly good modern hospital. The wards were opened on April 20th, and if the

Institute has done nothing else, it has at least shown how a community can make some provision for the treatment of the consumptive poor without waiting until a large amount of money is available and ideal conditions present themselves.

The Report is a record of work faithfully done by enthusiasts in the face of great difficulties. During the year 2,039 cases came under treatment; of these, 254 were treated in the hospital, of whom 245 had tuberculosis. Forty patients were less than a week in the hospital, and of these ten died, while the others left for various reasons.

Race and Nationality.—Nearly one-half of all the patients were foreign-born. The foreign-born males exceeded the foreign-born females in number by about 19 per cent. Many of these foreigners had been in the country for so short a time that it is assumed that they had the disease when they landed in America. Of the foreign-born patients, Russia contributed the greatest number in the first generation, Ireland the next greatest number, and Germany the next. Going back one generation, patients of Irish parentage supplied a larger quota than those of any other nationality, just as Ireland a generation ago supplied the greatest number of immigrants to the States, while Russians are now the most numerous. No statistics were kept as to the relative number of Jews amongst these foreigners, nor are statistics given showing the relative proportion of the various nationalities in the general population of the city.

Coloured people are much more prone to tuberculosis than are white people, and the proportion of admissions of coloured consumptives to white patients was greater than the proportion of coloured population to white population in Philadelphia.

Occupation.—The occupations which supplied the largest number of patients were—amongst females, housework, factory hand, seamstress, weaver and laundry worker; amongst males, labourer, tailor, clerk, cigarette maker, and a group of occupations in which alcohol seems to play a part—driver, waiter, and bar tender.

Predisposing Diseases.—More than one-half of the cases were preceded by pleurisy, pneumonia or typhoid fever.

Place of beginning of Tuberculosis of the Lungs.—The records support the view that the right lung is most frequently first affected.

Tissue involved.—Of the dispensary patients, more than one-half had both lungs involved, and about one-third were far ad-

vanced in the disease. Of the hospital patients, only about 7 per cent. had the disease limited to one lung.

Tubercle bacilli in Sputum.—Of the cases recorded, a little less than two-thirds showed the presence of tubercle bacilli in a limited number of examinations.

Hæmoptysis.—Nearly one-half the cases reported on gave a history of hæmoptysis.

Night Sweats.—More than half the cases reported on had night sweats. In practically all of the patients treated in hospital, the night-sweats ceased after the patient had been at rest awhile and had had his diet regulated.

Results.—The following table of the results of treatment is given :—

Number of cases improved	{ Hospital 72 } { Dispensary 465 }	537
Number of cases unimproved	{ Hospital 111 } { Dispensary 472 }	583
Number of cases results not recorded	{ Hospital 10 } { Dispensary 874 }	884
Number of cases terminated in death	{ Hospital 61 } { Dispensary 92 }	153

These figures are manifestly of little value. The word “improved” has been used to indicate any amelioration of symptoms with increase in weight and gain in physical health—one or both.

Some who entered the hospital as advanced cases were restored to a condition of physical health which enabled them to return to their occupations. “Unimproved” includes all cases which made no perceptible progress towards recovery. Many were lost sight of.

The statistics given refer to one year only, and the “improved” cases have not as yet stood the test of time.

Food.—In the hospital all patients are placed on a diet consisting of milk, eggs, and plain nutritious food. As a rule patients take three quarts of milk and six raw eggs a day, and one meal of solid food—beef or mutton, fresh vegetables and fruit. To the dispensary patients milk is served at their homes from the Institute’s milk wagon.

The most valuable field of the Institute’s work is in the prevention of tuberculosis. Its work in this direction cannot be measured. The patients have come from poverty-stricken homes in which they have been sources of danger to others. All the dispensary patients are drilled in preventive measures. As each patient comes into the waiting-room he is given a spit-cup,

and during his stay is taught to use it. When he goes away he is given a tin spit-cup holder, a bundle of paper cups and a bundle of paper napkins and paper bags to take home with him. He is also given a set of rules on a large cardboard to hang up in his room and on a folder to carry in his pocket. Every time he comes back to the dispensary he is given a new supply of materials, and is further instructed in their use. He is visited in his home at regular intervals by a pupil nurse, and is given such instruction and assistance as he may stand in need of for the prevention of the spread of the disease.

During its first year the Henry Phipps Institute has more than justified its existence. In educating the public, in the training of women in the care of tuberculous subjects, and in the treatment of consumptives, it is doing a work which must in time result in the diminution of the prevalence of tuberculosis in Philadelphia.

LECTURES.

Early in the Institute's first year a course of lectures on tuberculosis for the education of the public was organised.

The lecturers and their subjects were as follows :—

1. Edward L. Trudeau, M.D.—“The History of the Tuberculosis Work at Saranac Lake, N.Y.”
2. William Osler, M.D.—“The Home in its Relation to the Tuberculosis Problem.”
3. G. Sims Woodhead, M.A. (Cantab.), M.D. (Edin.).—“The Morbid Anatomy and Histology of Pulmonary Tuberculosis in Relation to its General Pathology and Clinical Manifestations.”
4. Hermann M. Biggs, M.D.—“The Administrative Control of Tuberculosis.”
5. Edoardo Maragliano, M.D.—“Specific Therapy of Tuberculosis and Vaccination against the Disease.”

1. *The History of the Tuberculosis Work at Saranac Lake, N.Y.*—In 1873 Dr. Trudeau went to the Adirondack wilderness in the endeavour to prolong his life. In spite of the gloomy prognostications of many medical friends, but supported by the cheerful courage of his wife, he settled in the small lodge of one Paul Smith, forty-two miles from a railway or a physician, and cut off for weeks by deep snows from any communication with the outer world.

At that time the work of Brehmer, Boddington, and M'Cormack was practically unknown in the States, and to most physicians Trudeau's enterprise must have seemed supreme folly, nevertheless the spring found him much improved in health, and he persevered. Owing to the result obtained in Trudeau's case, as well as in the cases of several other patients who subsequently wintered in the Adirondacks, Dr. Alfred Loomis published a paper in the *Medical Record* in 1876 drawing attention to the climatic value of the region for pulmonary invalids. For twenty-nine winters Dr. Trudeau has wintered at Saranac Lake, which has now grown to be a town of four thousand inhabitants, and has become one of the most noted health resorts in the world; for little by little the idea of starting a sanatorium for working men and women at a cost to them of less than that of operating it had begun to crystallise in Trudeau's mind. His friends gave him funds amounting to about \$5,000, and having bought with money "donated" by guides and residents of Saranac Lake village a few acres of land on a sheltered hillside, he began in 1884 the erection of two small buildings, the nucleus of the Adirondacks Sanatorium.

The first cottage consisted of one room, heated by a wood stove and lighted by a kerosene lamp. It cost \$350, and accommodated two patients; who sat most of the day on a covered piazza. This was the first attempt in America at applying the sanatorium rest and open-air method. Since then the evolution of the village has continued; the more recently erected cottages are substantial brick and stone structures, each costing about \$5,000 and accommodating four patients, lighted by electricity, heated by hot water and fire-places, and supplied with baths and running water. Each room opens directly on a covered veranda, on to which the patient's bed may be easily pushed.

Money came through the generosity of friends, and to-day a village of twenty-two buildings, entirely free from financial encumbrance, has grown up around the little one-roomed cottage which was its beginning.

During the first years of the sanatorium's existence there was difficulty in filling its few beds; at the present time not one in twenty who apply can be taken in. The exact results of treatment cannot be expressed by figures, but Dr. Trudeau reports that during 1902 of really incipient cases—forty in number—75 per cent. were discharged as apparently "cured," 15 per cent. had

their disease arrested, 10 per cent. were improved. While of advanced cases—ninety-nine in number—12 per cent. were discharged as apparently “cured,” 57 per cent. with the disease arrested, 22 per cent. improved, 8 per cent. failed, and 1 per cent. died in the institution. Of the far advanced cases none were apparently “cured,” in 33½ per cent. the disease was arrested, 33½ per cent. improved, and 33½ per cent. failed.

These figures can be taken only for what they are worth; “cured” is a singularly unsatisfactory word to apply in cases of tuberculosis, while cases classed as incipient by one physician might be differently classed by another. Of more value are the figures given of 1,500 cases which were discharged from two to seventeen years. Of these 434 could not be traced, leaving 1,066 which have been traced; of these 46.7 per cent. were still living, of whom 31 per cent. are known to be well at present; in 6.5 per cent. the disease is still arrested, 4 per cent. have relapsed, 5.2 per cent. are chronic invalids, and 53.3 per cent. are dead.

The only specific treatment which has been carried on has been Koch’s tuberculin treatment. All the tuberculins prepared by Koch, as well as Hunter’s modification, most of which were made in the Saranac Laboratory, have been tested. Koch’s emulsion of crushed bacilli is being employed in a few instances. The results of incipient cases treated with and without tuberculin which were discharged from 1890 to 1901 were as follows:—Of the incipient cases which received no tuberculin, 61 per cent. were alive up to the date of the paper, while of the tuberculin treated incipient cases 76.7 per cent. were living—an appreciable percentage in favour of the tuberculin treated cases.

The fact that none of the employers or servants in the institution has been known to develop consumption is proof of the efficacy of the means taken to prevent the spread of the disease.

The Saranac Laboratory was the first laboratory in the States devoted to original researches in tuberculosis. After years of patient effort on the part of Dr. Trudeau it has been equipped with every appliance for bacteriological and chemical work, and it is now at the disposal of any medical man desiring to make researches bearing on the ætiology, bacteriology, or chemistry of tuberculosis.

2. *The Home in its Relation to the Tuberculosis Problem.*—Foremost amongst those whose judgment is matured by observation

and reflection, and whose minds are seasoned by reading and study, stands Dr. William Osler. Few have read so much, fewer can apply their reading to greater advantage, and thus it is that we read this paper, on a topic on which we considered that almost all that could be said had been said already, with absorbed interest.

Dr. Osler states that the present crusade against tuberculosis has three specific objects:—First, *educational*—the instruction of the profession and the instruction of the people; second, *preventive*—the promotion of measures which will check the progress of the disease in the community; third, *curative*. The three are of equal importance, and the first and second are inter-dependent. The educational aspects of the problem are fundamental, as it is in the homes where practically the disease is born and bred.

Few reach maturity without infection, none old age without a focus somewhere.

Dr. Osler throws over von Behring's theory as to the mode of infection, and adheres to the older view as to the prevalence of infection by inhalation.

With the seed sown broadcast we are beginning to appreciate that the case of the soil is quite as important as the case of the seed. Diminished resistance is the effect of overcrowding and insanitary surroundings, while the constant migration of consumptives in tenement houses results in wide-spread house infection; thus in Baltimore he found that one hundred and eighty-three patients had occupied three hundred and seventy-nine houses during their illnesses. Dr. Osler suggests a plan of campaign on the following lines:—

(a.) An educational health campaign in the homes, carried on by the personal visits of intelligent women.

(b.) Compulsory notification as worked in New York City.

(c.) The Health Boards should be enlarged so as to deal efficiently with the disinfection of the houses occupied by tuberculous patients.

(d.) The provision of proper housing accommodation for the poor and the proper control of tenements.

(e.) Placing on the landlord the responsibility of providing, under the control of the Board of Health, a clean, wholesome house for a new tenant.

(f.) Wholesale condemnation of insanitary blocks, and rebuilding by the municipality, as has been done in Glasgow.

Probably not 2 per cent. of all tuberculous patients can take advantage of sanatorium or climatic treatment. What can be done for the remaining 98 per cent. ? The hospital care of the very sick should be provided for in special wards of the city hospitals. To give the best of care to these unhappy victims is true charity to them ; to place them where they cease to be a danger to the general health is true charity to others. The majority, however, must be treated at home. Here more especially comes in the need for early diagnosis. The essentials of home treatment are :—1. The confidence of the patient ; 2. masterful management ; 3. persistence—benefit is usually a matter of months, complete arrest a matter of years, absolute cure a matter of many years ; 4. sunshine by day, fresh air night and day ; 5. rest while there is fever ; 6. bread stuffs and milk, meat and eggs.

3. *The Morbid Anatomy and Histology of Pulmonary Tuberculosis in Relation to its General Pathology and Clinical Manifestations.*—Dr. Sims Woodhead's lecture was a *resumé* of the pathology of pulmonary tuberculosis illustrated by slides, most of the sections being made through the whole lung.

4. *The Administrative Control of Tuberculosis.*—As long ago as 1887 Dr. Biggs advocated the adoption in New York of measures for the control of tuberculosis, and little by little he has seen his ideas gain acceptance and his system adopted with marked benefit to the health of New York, the second largest city in the world.

The measures which are required for the efficient administrative control of the disease are :—

(a.) *The compulsory notification and registration of all cases.*—These are essential, for without them the enforcement of any uniform measures for prevention is impossible. Practical experience has proved that the objections urged against this procedure are without force or foundation.

In New York City a system of partially voluntary and partially compulsory notification was adopted in 1893. Public institutions were required to report cases coming under their supervision, private physicians were requested to do so. In 1897 regulations requiring the notification of all cases were adopted. At first these regulations were not strictly enforced, although

each year more complete compliance was attained. The information obtained being confidential, action is taken by the authorities only where the conditions require it. If the private physician undertakes to give such instructions as are necessary to prevent the transmission of the disease to others, no further cognizance of the case is taken by the health authorities after registration.

During 1902 more than 16,000 cases were notified, of which 4,200 were duplicates, and in 1903 more than 17,000 cases were notified.

(b.) *The sanitary authorities should afford facilities for the free bacteriological examination of the sputum in all instances of suspected disease.*—Such provision was provided in New York City in 1894. During 1903 more than 11,000 specimens of sputum were examined in the laboratories of the department of health. There are about 200 depôts in the city at which specimens may be left for the Department's collectors.

(c.) *Education of the medical profession and of the people on the subject of tuberculosis*, by means of circulars, posters, and the press.

(d.) *The visitation of consumptives, who are not under the care of private physicians, in their own homes*, by a physician or trained nurse.

(e.) *The disinfection by means of formaldehyde gas, or the thorough renovation of rooms or apartments which have been vacated by consumptives, either by death or removal.*—The cost of disinfection should be borne by the sanitary authority, but the cost of renovation, when necessary, should be borne by the landlord. The constant migrations of consumptive patients in tenement houses is the most troublesome part of the problem in New York.

(f.) *Repeated visits to cases in tenement houses* by trained nurses who see if the precautions are being carried out.

(g.) *Suitable food—e.g., milk and eggs—should be provided in those instances in which the families are in destitute circumstances.*

(h.) *Provision should be made for three classes of institutions for consumptives—* α . Free dispensaries. β . Hospitals for advanced cases. γ . Sanatoriums.

(i.) *The sanitary authorities should issue regulations applicable to public institutions as to the care of consumptives.*—The admission and treatment of such cases in the general wards of general hospitals should be prohibited, and all public institutions caring

for such patients should be required to provide separate wards or rooms.

(1). *The sanitary authorities should enact and enforce regulations prohibiting spitting in all kinds of public places, and the careless disposal of sputum*

What may reasonably be expected from the enforcement of these measures? Dr. Biggs finds the answer in his experience in New York. Experience has shown that the obstacles are largely imaginary, and that the harmful results which were predicted as certain to follow have failed to materialise. Practically no serious difficulties are encountered in carrying on the work. There has been the hearty approval of the majority of the medical profession and acquiescence by the remainder.

There has been a more rapid fall in the tuberculous death-rate in New York City than in any great city in the world, notwithstanding the fact that the conditions in many respects are much more unfavourable, because of the very dense population in the great tenement house districts, and the large element of foreign-born population. In no city in the world is there such a density of population as exists in many of the wards of the Borough of Manhattan. There has been a decrease in the total tuberculous death-rate between 1887 and 1902—a period of sixteen years—of 40 per cent., while there has been no corresponding increase in the death-rate from the acute pulmonary diseases.

Dr. Biggs believes that the next fifteen years will see a reduction quite equal to that which has already taken place.

“ZOO” TUBERCULOSIS.

DR. BISSELL, City Bacteriologist of Buffalo, New York, has made investigations into the tuberculosis in the elk and red deer paddock at the Park “Zoo,” with special reference to the probable danger of infection to visitors and persons living in the close neighbourhood of the Park. No danger, he believes, is to be apprehended from that source. His report states that since 1898 20 elk, 7 red deer, 2 buffaloes, 3 monkeys, and 1 wolf have died from tuberculosis. Dr. Bissell recently took cultures from the soil of paddocks to ascertain how much tuberculosis it contains. He states that there is more danger from the ordinary street dust than from this soil. Disinfection of the soil is, therefore, not recommended.—*Brit. Med. Journ.*, August 26, 1905.

SOUTH AFRICAN MEDICAL CONGRESS, JUNE, 1905.

DR. CHARLES H. PORTER, D.P.H., has made the following Report to the Public Health Committee of the Johannesburg Municipality, of which he is the very able and efficient Medical Officer of Health :—

The South African Medical Congress was held at Maritzburg, under the Presidency of Dr. Hyslop of that city, from the 12th to the 17th of June, 1905, inclusive. This period was fully occupied by the consideration of varied and interesting medical subjects, and, thanks to the organising ability and great personal kindness and hospitality of Dr. Hyslop and his Natal confrères, was in every way most successful and enjoyable.

On Tuesday, June 13th, in the Medical Section, a very thoughtful and suggestive address was delivered by Dr. Ramsbottom, of Bloemfontein (President of the Medical Council of the Orange River Colony) on "The Threatened Conquest of South Africa by the *Bacillus Tuberculosis*." Dr. Ramsbottom pointed out that in the past tuberculosis was a comparatively unknown disease in South Africa, but that of late years it had markedly increased, was increasing, and ought to be checked. This he attributed in no small degree to the unrestricted and unsupervised immigration from Europe of consumptive patients, many of whom, on arrival, are both without resources and in a hopeless stage of the disease. In addition, they have generally little or no idea of the precautions necessary to prevent the communication of their illness to others. These poor people consequently drift into cheap and uncomfortable boarding-houses, often sleep in crowded bedrooms, and not only end their lives under most unhappy conditions, but, undoubtedly, do much to disseminate this scourge both amongst natives and whites. Dr. Ramsbottom truly said that no more heartless and improper advice can be given by medical men in Europe than to counsel such poor sufferers to come to South Africa; and whilst, very rightly, he did not suggest that measures of unqualified exclusion should be devised and enforced against consumptive immigrants, he strongly urged that such immigration should be jointly regulated by the South African Colonies, and the patients received into proper

Government sanatoria, or otherwise adequately supervised. The matter was subsequently discussed in the Public Health Section, and Dr. Jasper Anderson, Medical Officer of Health for Capetown, in the course of an interesting paper on the same subject, mentioned that an attempt, as regards Cape Colony, to legislate in this direction is embodied in Section 63 of the Public Health Acts (Amendment) Bill, to be considered next Session. There was entire unanimity on the importance of this matter, and it was resolved :—

1. That it is the imperative duty of the South African Colonial Governments to take up the matter of the prevention of phthisis, including the regulation and supervision of the immigration of consumptives.
2. That a representative medical committee, consisting of two delegates from each South African British Colony, be formed, and that Delagoa be asked to nominate one delegate.
3. That this committee prepare a draft scheme to be submitted to next year's South African Medical Congress.
4. That the action of this South African Inter-colonial Medical Committee be communicated to the International Medical Congress which is to meet at Lisbon in 1906.
5. That the suggested Cape legislation on the subject be approved.

Papers on Leprosy, Cerebro-spinal Meningitis, Scurvy, and "Amaas" (or Kaffir Pox), were also read in the Medical Section.

The afternoon of Tuesday, June 13th, was devoted to an inspection of the small but excellent Government Bacteriological Laboratory, which is very ably directed by Mr. Watkins-Pitchford, F.R.C.V.S., assisted by Dr. Watkins-Pitchford. In addition to usual laboratory work, these gentlemen here prepare the vaccine used in Natal, and it was incidentally stated that during the recent outbreak of small-pox £25,000 was spent on vaccination in the colony. The laboratory also boasts of a collection of the particularly repulsive poisonous snakes of Natal, and possesses a good meteorological station, in which is included a very ingenious apparatus (on the same principle as one devised by Pettenkofer of Munich) for recording the variations of ground-water. Reference will again be made to this.

Whilst at the laboratory a copy was obtained of a report on "The Efficacy of Various Disinfectants," prepared by Mr. Pitch-

ford for the Natal Government, at the request of the General Manager of Railways. This report is quite the best and most comprehensive of its kind with which Dr. Porter is acquainted, and is based on the results of Messrs. Pitchford's own exhaustive comparative trials (involving 2,400 cultivation experiments) of the germ-killing power of the disinfectants in question. Their results are somewhat different to those recently collated by Dr. Porter, from various sources, and are thus summarised :—

Cost of Disinfectant Efficient in General Germicidal Efficiency to

1 Gallon of Pure Carbolic Acid :—

Cyllin	4 1/10d.	(1 gall. at 4/-)	=	11.6	gals. Carbolic.
Izal	7 1/10d.	„ 4/-	=	7.0	„
Lysol	1.10 8/10d.	„ 8/-	=	4.2	„
Quibell's	1/3d.	„ 2/6	=	2.0	„
Formalin	6/0½d.	„ 5/6	=	0.91	„

On the forenoon of Wednesday, June 14th, Dr. Porter, favoured with a permit, went through the Maritzburg Prison.

In the afternoon the Public Health Section was opened by an Address sent by Dr. Turner, M.O.H., Transvaal, on “Some Circumstances influencing Common Causes of Mortality in England and South Africa.” Amongst other considerations, Dr. Turner referred to the high mortality amongst infants from digestive disorders, and the consequent importance of breast feeding and pure milk supplies. Lieut.-Col. Porter, R.A.M.C., Bloemfontein, described the septic tank and bacterial bed installation at Pretoria : and Dr. Hill, Health Officer for Natal, gave a most interesting account of the recent outbreak of malaria in that colony. Perhaps its chief application to Johannesburg is the possibility of the malaria mosquito being imported and getting a footing here : in this connection, Dr. Dumat of Durban expressed the conviction which Dr. Hill did not entirely share, that in the case of the recent outbreak on the Natal coast the insect had been introduced by the new railway from Zululand.

The “Medical Inspection of School Children” was advocated by Dr. Boyd of Pretoria, and a resolution to that effect was adopted by the Congress, as well as one deprecating the employment in schools of teachers suffering from tuberculosis. Dr. Watkins-Pitchford recorded a number of very interesting observations on the relation of enteric fever in Natal to various meteorological conditions, such as the temperature of the earth and air,

the incidence of rainfall, and the rise and fall of ground-water. A commencement in the same direction has been made by the Public Health Committee in Johannesburg, and, with the sanction of that Committee, it is now proposed to construct an apparatus—similar to that devised by Dr. Watkins-Pitchford—for recording the variations of ground-water levels, a matter to which little practical investigation has been directed even in England, though in Germany observations have been long made.

On Friday, June 16th, a very interesting address on Black-water Fever was given by Dr. Fleming, Medical Director, Rhodesia, who has much experience of the disease. This was followed by a paper (by Mr. Watkins-Pitchford, F.R.C.V.S.), of exceptional general and medical interest on the anatomy, habits, and venom of Natal snakes, and also on the production and use of anti-venom. Specimens of the most notable snakes and of their dried poison were shown, and it was stated that, judged from its effects on lower animals, one discharge of the Black Mamba's venom is sufficient to kill eight humans.

On Friday afternoon, the 16th, the Congress visited the Hon. Joseph Baynes' model dairy and creamery at Nels Rust, and through the courtesy of Mr. Alexander, the manager, Dr. Porter obtained the following particulars of their methods :—

The milk and cream are obtained not only from Mr. Baynes' own farm, on which there are a large number of well-housed and well-kept milch cows, but also from farmers for a radius of many miles round. Each of these farmers is supplied on easy terms with a sterilising plant which costs about £15, and can be obtained either from the "Dairy Outfitting Co.," 251 Pentonville Road, King's Cross, or from "The Dairy Supply Co.," Museum Street, London. It consists of a double-jacketed "Verlix" beater, a small paraffin stove, an aerator, and a swing-stand. Under the conditions of sale the farmers undertake to strain their milk, heat it in the steriliser to 180° F., and then cool it down over the aerator, through which river-water flows, to the temperature of river-water. It is then sent to the creamery, where it is weighed, tested for acidity (which must not exceed 0.2 degrees), screened twice, heated again in a large steriliser to 180° F. for 10 minutes, then cooled to about 80° F., by passing over an aerator through which circulates river-water, and further reduced to a temperature of 33° F., by flowing over a brine-cooled cylinder. The milk is then drawn off into steam-sterilised cans of various sizes (all

bottles have been discarded) and kept in a refrigerating chamber till it is placed in a refrigerating railway van for transport to Durban or elsewhere. Everything is scrupulously clean, and one could not but wish that such an institution existed in Johannesburg.

In conclusion, it is to be observed that, apart from the actual work of the Sections, one was privileged to meet and exchange ideas with Health Officers and other medical men from various parts of the colony, which is not the least beneficial and useful of the advantages of such gatherings.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

At a meeting of the College held on Wednesday, July 26, 1905, the following gentlemen, having passed the requisite examinations, were admitted Fellows:—Lewis Beesly, L.R.C.S.E., Edinburgh; Alexander Brownlee, L.R.C.S.E., Edinburgh; Harold Branson Butler, M.R.C.S. Eng., Guildford; Duncan Macnab Callender, M.B., Ch. B., Edinburgh; Naunidh Rai Dharmavir, L.R.C.S.E., Mexborough; Augustus D'Souza, L.R.C.S.E., Edinburgh; James Ferguson Duncan, M.B., Ch.B., Edinburgh; James Forrest, M.B., Ch. B., Blackpool; Alfred Thomas Gavin, M.B., C.M., Dunaskin; Bharat Chandra Ghosh, L.R.C.S.E., Punjab; Frederick Charles Hitchins, M.R.C.S. Eng., St. Austell, Cornwall; Mathew Holmes, M.B., Ch. B., Edinburgh; Robert James Irving, M.B., C.M., Norwich; Samuel Jesudasan, M.B., C.M., London, N.; John Arnold Jones, M.B., Ch. B., Manchester; Edwin Malcolm Lithgow, M.B., Ch. B., Edinburgh; Samuel Harvey M'Coy, M.R.C.S. Eng., St. Catharines, Ontario; John Stewart Merrillees, L.R.C.S.E., Auburn, Melbourne; John David O'Donnell, L.R.C.S.E., Mysore, India; George Benjamin Pemberton, M.B., Ch. B., Edinburgh; Charles George Webster, L.R.C.S.E., Captain, I.M.S.; and Charles Peterson Weekes, M.R.C.S. Eng., Sutton, Surrey.

The Medal and Set of Books forming the "Bathgate Memorial Prize," presented to the College by Colonel William Lorimer Bathgate, in memory of his late father, William M'Phune Bathgate, Fellow of the College, was awarded to Mr. Peter Gorrie, 3 Cameron Park, Edinburgh.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SIR THORNLEY STOKER, M.D., F.R.C.S.I.

General Secretary—JAMES CRAIG, M.D., F.R.C.P.I.

SECTION OF SURGERY.

President—ARTHUR CHANCE, Pres. R.C.S.I.

Sectional Secretary—EDWARD H. TAYLOR, M.D., F.R.C.S.I.

Friday, May 12, 1905.

THOMAS E. GORDON, F.R.C.S.I., in the Chair.

Exhibits.

MR. WHEELER exhibited (*a*) a patient upon whom he had performed the Talma-Morrison operation; (*b*) portion of the small intestine removed from a strangulated hernia; (*c*) transfusion apparatus.

MR. J. L. KEEGAN exhibited (*a*) a patient after wiring operation for fractured patella; (*b*) gangrenous cæcum removed for volvulus; (*c*) malignant stricture of the rectum.

MAJOR HOLT, R.A.M.C., exhibited (*a*) aneurysm of the innominate artery; successful ligature; death from tuberculosis fifteen months later; (*b*) aneurysm of the innominate artery; unsuccessful distal ligature and wiring by Power and Colt's apparatus; (*c*) vermiform appendix, proximal end obliterated, distal end perforated; (*d*) fragments of a broken semilunar fibro-cartilage loose in the knee-joint; (*e*) kidney with multiple abscesses, and scars after former abscesses, the ureter showing scar of previous ureterotomy for calculus.

MR. R. A. STONEY exhibited (*a*) tuberculous cæcum, appendix and ileum; (*b*) goitre; (*c*) fibro-lipoma of the skin.

MR. PASLEY exhibited an irrigating apparatus.

Operation for Closure of the Hard Palate during the three months following Birth, practised by Mr. Brophy, of Chicago.

SIR THORNLEY STOKER read a paper on the above. He had performed the operation in three cases, and found it so excellent

that he intended to adopt it in future in suitable cases. This operation can be practised only during the period mentioned, as the bones are afterwards too fully ossified to permit the necessary change in their position. It consists essentially in drawing the maxillæ and palate bones of opposite sides together so as to close the cleft. This is done by two wire sutures passed across from one side to the other above the alveolar processes. They lie above the floor of the nasal fossæ. One is inserted behind the malar ridge, the other in front of it. The bones are forced together by pressure so as to close the cleft, the edges of which have been pared. If the bones cannot be approximated by pressure alone, the malar process is divided on each side. The anterior and posterior ends of the wires on each side are twisted together over a lead suture-plate fitted to the outer surface of the alveolus. The hard palate, the præmaxillæ, and generally the soft palate, are operated on at once. The hare-lip is closed subsequently when free access to the mouth for operative purposes is not required. The wire sutures are withdrawn after about four weeks. In the main he strongly advocated the operation, which had yielded him extremely good results, and which was not a formidable one even at the tender age of its performance. He suggested some minor points in procedure which he had found advantageous. He stated his belief that though the operation is not likely to be always one of academic perfection, yet it is on the whole an immense advance in the treatment of cleft palate, and one which cannot be overlooked and should be practised when possible.

MR. T. E. GORDON considered the risks of Brophy's operation somewhat serious, especially in those cases where it was found at first impossible to bring the edges of the palate together, and where further steps were necessary.

MR. EDWARD TAYLOR stated that he had operated on a considerable number of cases by the older and better known procedures with various modifications of his own. The all-important thing was to operate at an early age so as to secure closure of the cleft before the child began to speak. The cases he had operated on recently were from twelve to fifteen months old, and in nearly all he had succeeded in obtaining complete closure of the gap and very gratifying results as regards speech. He thought Sir Thornley Stoker's paper would afford a strong inducement to many surgeons to practise Brophy's operation.

MR. W. S. HAUGHTON said he had performed an operation very similar to Brophy's on a child nine days old. The case was one of emergency, as the child was starving. He had been struck by the ease with which the parts were brought together and with the entire absence of shock.

MR. KENNEDY alluded to the danger attending loss of blood in operations for cleft palate in young children and to the fact that in Brophy's operation the soft palate remained to be operated on after the closure of the hard palate.

SIR THORNLEY STOKER, in reply, stated that in his experience very much less disturbance and shock followed Brophy's operation than operations performed upon older children. The operation was singularly free from risk. Mr. Kennedy evidently had misunderstood him, as he (Sir Thornley Stoker) considered the risk from loss of blood very serious, and had specially advocated a modification of Brophy's procedure to obviate it. With the exception of one case he had not deferred operations on the soft palate. In that case he found it impossible to approximate the margins of the two segments of the hard palate.

A Case of Volvulus of the Cæcum.

MR. J. L. KEEGAN read notes on the above. Mr. Kennedy and Mr. E. H. Taylor discussed the communication.

SECTION OF MEDICINE.

President—SIR W. J. SMYLY, M.D., P.R.C.P.I.

Sectional Secretary—R. TRAVERS SMITH, M.D.

Friday, May 19, 1905.

DR. JAMES LITTLE in the Chair.

Exhibits.

DR. F. J. DUNNE exhibited a case of tuberculosis of lungs and of knee treated by Professor Deny's Tuberculin.

The Bacillus Coli Communis as a cause of Septicæmia.

DR. T. GILLMAN MOORHEAD read a paper on the above. He, in the first place, discussed the possibility of the existence of a septicæmia caused entirely by the colon bacillus, and, after a review of the literature, concluded that such a possibility was

at any rate not disproved, though as yet there was no very decided evidence in its favour. He then described a case which had been under his observation for a period of 126 days, during the whole of which there had been a remittent pyrexia. For three or four hours daily the temperature rose to about 104.5° F., and then quickly sank to normal. Numerous blood examinations during life failed to show the presence of any micro-organisms, but *post-mortem* the colon bacillus was found widely disseminated throughout the body, and in the blood and cerebro-spinal fluid. He believed the case to be one of "colon septicæmia," analogous to the typhoid septicæmia, which is now well recognised as a distinct type.

MEDICINE AS A MEANS OF LIVELIHOOD.

It has often been remarked that the medical profession is the only one that works for its own undoing. To it mankind owes hygiene which has already rid the world of not a few scourges, and which may in time stamp out disease. The triumph of hygiene means the passing away of medicine. The art of healing must necessarily become superfluous when there is nothing to heal. Already there are signs which seem to indicate that at least in certain directions the doctor's occupation will, at no very distant day, be gone. It is becoming increasingly difficult for the medical practitioner to make a living. As a friend of ours tersely put it—"There's not enough acute disease to go round." Other causes contribute to the same end. We have taught the public how to prevent disease, and the manufacturing chemist has taught them how to treat themselves. Hospitals send the rain of their free advice and physic alike on the poor and on those who can well afford to pay. Massage, electricity, and special forms of treatment are largely in the hands of men who are not of the household of medicine. Quacks of all kinds compete with the lawful practitioner. Should the doctor plead *Il faut vivre*, the public will soon be in a position to reply, *Je n'en vois pas la nécessité*. It is difficult to indicate a remedy for a state of things that is largely a consequence of the operation of inexorable economic laws.—*The Practitioner*, August, 1905.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by the EDITOR.

VITAL STATISTICS

For four weeks ending Saturday, August 12, 1905.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending August 12, 1905, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 18.9 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,959. The deaths registered in each of the four weeks ended Saturday, August 12, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality.

TOWNS, &c.	Week ending				Aver- age Rate for 4 weeks	TOWNS, &c.	Week ending				Aver- age Rate for 4 weeks
	July 22	July 29	Aug. 5	Aug. 12			July 22	July 29	Aug. 5	Aug. 12	
22 Town Districts	18.2	19.6	19.9	18.9	19.2	Lisburn -	36.4	13.6	18.2	13.6	20.4
Armagh -	20.6	13.7	27.5	27.5	22.3	Londonderry	9.9	12.4	16.1	16.1	13.6
Ballymena	-	33.5	23.9	14.4	18.0	Lurgan -	26.6	17.7	22.1	4.4	17.7
Belfast -	20.9	22.0	22.1	18.9	21.0	Newry -	21.0	12.6	16.8	16.8	16.8
Clonmel -	25.6	10.3	35.9	10.3	20.5	Newtown- ards	28.6	17.2	11.4	22.9	20.0
Cork -	9.6	19.9	15.8	21.9	16.8	Portadown -	10.3	10.3	10.3	20.7	12.9
Drogheda -	16.3	4.1	8.2	24.5	13.3	Queenstown	6.6	26.4	13.2	6.6	13.2
Dublin - (Reg. Area)	20.1	20.8	21.2	19.7	20.4	Sligo -	9.6	9.6	24.0	28.8	18.0
Dundalk -	12.0	16.0	19.9	8.0	14.0	Tralee -	-	5.3	5.3	15.9	6.6
Galway -	19.4	23.3	11.7	19.4	18.5	Waterford -	13.6	13.6	13.6	19.5	15.1
Kilkenny -	-	29.5	14.7	19.7	16.0	Wexford -	14.0	-	9.3	9.3	8.2
Limerick -	15.0	19.1	16.4	19.1	17.4						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, August 12, 1905, were equal to an annual rate of 2.3 per 1,000, the rates varying from 0.0 in fourteen of the districts to 6.9 in Armagh. Among the 130 deaths from all causes in Belfast are—one from whooping-cough, 3 from enteric fever, and 28 from diarrhoeal diseases; and the 32 deaths in Cork include one from enteric fever and 4 from diarrhoeal diseases.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended August 12, amounted to 238—109 boys and 129 girls; and the deaths to 151—70 males and 81 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 20.8 in every 1,000 of the population. Omitting the deaths (numbering 8) of persons admitted into public institutions from localities outside the area, the rate was 19.7 per 1,000. During the thirty-two weeks ending with Saturday, August 12, the death-rate averaged 23.0, and was 3.5 below the mean rate for the corresponding portions of the ten years 1895–1904.

The registered deaths (151) include one from diphtheria and 24 deaths from diarrhoeal diseases (weekly mean of earth temperature at 4 feet, 58.9°)—in the 3 preceding weeks 18, 20, and 25 deaths respectively from diarrhoeal diseases had been registered. The deaths of 3 persons were attributed to *gastro-enteritis*, and were classified among diseases of the digestive system.

One death was due to tetanus.

There were four deaths from *pneumonia* (undefined).

The deaths from tuberculous disease numbered 31, and include 8 from tubercular phthisis, 14 from *phthisis*, 3 from tubercular meningitis, and 6 deaths from other forms of the disease. The deaths from all forms of tuberculous disease registered in the 3 weeks preceding had been 29, 20, and 28, respectively.

One death was caused by carcinoma, and 7 deaths were assigned to cancer (undefined).

The deaths of 2 infants followed upon "premature birth."

The deaths of 6 children under 5 years of age from *convulsions* are included in 11 deaths from diseases of the brain and nervous system.

There were 19 deaths from diseases of the heart and blood vessels.

Five deaths were due to bronchitis.

Two deaths were classified as from accidental violence.

In 7 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 3 children under 5 years of age (including 2 infants under one year old) and the death of a person aged 67 years.

Fifty-nine of the persons whose deaths were registered during the week ended August 12, were under 5 years of age (49 being infants under one year, of whom 5 were under one month old), and 35 were aged 60 years and upwards, including 15 persons aged 70 and upwards, of whom 2 were octogenarians, and one (a man) was stated to have been aged 93 years.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious disease notified under the "Infectious Diseases (Notification) Act, 1899," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended August 12, 1905, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epi- demic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Fever	Total
City of Dublin	July 22	-	•	•	2	-	-	3	-	5	3	9	-	•	•	•	12
	July 29	-	•	•	3	-	-	1	-	2	11	13	-	•	•	•	23
	Aug. 5	-	•	•	5	-	-	1	-	1	•	7	-	•	•	•	16
	Aug. 12	-	•	•	5	-	-	1	-	1	10	6	-	•	•	•	23
Rathmines and Rathgar Urban District	July 22	-	•	•	1	-	-	-	-	-	1	1	-	•	•	•	3
	July 29	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	1
	Aug. 5	-	•	•	-	-	-	2	-	-	-	-	-	•	•	•	4
	Aug. 12	-	•	•	-	-	-	1	-	-	-	-	-	•	•	•	1
Pembroke Urban District	July 22	-	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-
	July 29	-	-	-	-	-	-	-	-	-	1	-	-	•	-	-	1
	Aug. 5	-	-	-	2	-	-	-	-	-	-	1	-	•	-	-	3
	Aug. 12	-	-	-	-	-	-	-	-	-	1	1	-	•	-	-	2
Blackrock Urban District	July 22	-	•	•	-	-	-	-	-	-	1	-	-	•	•	•	1
	July 29	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	1
	Aug. 5	-	•	•	-	-	-	1	-	-	-	-	-	•	•	•	1
	Aug. 12	-	•	•	-	-	-	1	-	-	-	-	-	•	•	•	1
Kingstown Urban District	July 22	-	•	•	1	-	-	-	-	-	-	-	-	•	•	•	1
	July 29	-	•	•	1	-	-	-	-	-	-	-	-	•	•	•	1
	Aug. 5	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
	Aug. 12	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
City of Belfast	July 22	-	•	•	3	-	-	1	-	18	6	3	1	•	•	•	23
	July 29	-	•	•	8	-	-	4	1	15	13	2	-	•	•	•	43
	Aug. 5	-	•	•	3	-	-	-	-	19	2	5	1	•	•	•	30
	Aug. 12	-	•	•	12	-	-	1	-	10	15	6	1	•	•	•	45

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended August 12, 1905, 6 cases of measles were admitted to hospital, 3 were discharged, and 8 patients remained under treatment at its close.

Seven cases of scarlet fever were admitted to hospital, 5 were discharged, and 32 cases remained under treatment at the close of the week. This number is exclusive of 21 patients still under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital, Dublin.

Seven cases of diphtheria were admitted to hospital, one was discharged, and 14 patients remained under treatment at the close of the week.

Eleven cases of enteric fever were admitted to hospital, 12 were

discharged, and 53 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 7 cases of pneumonia were admitted to hospital, 5 were discharged, and 13 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended August 12, in 76 large English towns, including London (in which the rate was 17.3), was equal to an average annual death-rate of 17.5 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 13.8 per 1,000, the rate for Glasgow being 14.1, and for Edinburgh 14.6.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20 N., Long. 6° 15' W., for the Month of July, 1905.

Mean Height of Barometer, - - -	30.036 inches.
Maximal Height of Barometer (3rd, at 9 p.m.),	30.284 „
Minimal Height of Barometer (29th, at 9 a.m.),	29.700 „
Mean Dry-bulb Temperature, - - -	62.3°.
Mean Wet-bulb Temperature, - - -	58.4°.
Mean Dew-point Temperature, - - -	55.1°.
Mean Elastic force (Tension) of Aqueous Vapour,	.437 inch.
Mean Humidity, - - - - -	77.7 per cent.
Highest Temperature in Shade (on 14th),	81.8°.
Lowest Temperature in Shade (on 6th),	49.3°.
Lowest Temperature on Grass (Radiation) (4th and 27th), - - - - -	45.0°.
Mean Amount of Cloud, - - - - -	60.7 per cent.
Rainfall (on 17 days), - - - - -	.821 inch.
Greatest Daily Rainfall (on 9th), - - -	.110 inch.
General Directions of Wind, - - -	W., S.W.

Remarks.

A very warm and generally favourable month, rain falling frequently indeed, but in Dublin on no occasion heavily, and in this city and its neighbourhood there was an entire absence of electrical disturbances. The rainfall was almost exclusively in the form of showers, and not a single wet day was observed. The amount of cloud was large—70 per cent. at 9 a.m.—but falling to 51 per cent. at 9 p.m. The dominant winds were W. and S.W. The duration of bright sunshine was estimated

at 173.25 hours, or a daily average of 5.6 hours, compared with a twenty years' average (1881-1900) of 166.8 hours recorded at the Ordnance Survey Office, Phoenix Park.

In Dublin the arithmetical mean temperature (63.8°) was 3.5° above the average of the 30 years 1871-1900 (60.3°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 62.3° . In the forty years ending with 1904, July was coldest in 1879 ("the cold year") (M. T. = 57.2°). It was warmest in 1887 (M. T. = 63.7°); in 1868 ("the warm year") and in 1901 (M. T. = 63.5°). In 1900 the M. T. was 63.4° ; in 1904 it was 61.6° . The July of the present year, therefore, constitutes a record for warmth.

The mean height of the barometer was 30.036 inches, or 0.121 inch above the corrected average value for July—namely, 29.915 inches. The mercury rose to 30.284 inches at 9 p.m. of the 3rd, and fell to 29.700 inches at 9 a.m. of the 29th. The observed range of atmospheric pressure was, therefore, only .584 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 62.3° , or 3.9° above the value for June, 1905. Using the formula, *Mean Temp.* = *Min.* + (*Max.*—*Min.* $\times .465$), the value was 63.3° , or 3.5° above the average mean temperature for July, calculated in the same way, in the thirty years 1871-1900, inclusive (59.8°). The arithmetical mean of the maximal and minimal readings was 63.8° , compared with a thirty years' average of 60.3° . On the 14th, the thermometer in the screen rose to 81.8° —wind, S.W.; on the 6th the temperature fell to 49.3° —wind, N.W. The minimum on the grass was 45.0° on the 4th and again on the 27th.

The rainfall was only .821 inch, distributed, however, over 17 days. The average rainfall for July in the thirty-five years 1866-1900, inclusive, was 2.560 inches, and the average number of rainy days was 18. The rainfall, therefore, was much below the average, and the rainy days were slightly below the average. In 1880 the rainfall in July was very large—6.087 inches on 24 days; in 1896, also, 5.474 inches fell on 18 days. On the other hand, in 1870, only .539 inch was measured on 8 days; in 1869, the fall was only .739 inch on 9 days; and in 1868, .741 inch fell on but 5 days. In 1904, 1.088 inches fell on 15 days.

High winds were noted on 8 days, but never attained the force of a gale. Temperature reached or exceeded 70° in the screen on 17 days, compared with 10 days in July, 1904, and 7 days in July of both 1902 and 1903. The thermometer never failed to reach 60° . [In July, 1887, temperature reached or exceeded 70°

in the screen on no fewer than 17 days. In 1888 the maximum for July was only 68.7°.

The atmosphere was foggy on the morning of the 19th.

The rainfall in Dublin during the seven months ending July 31st amounted to 11.022 inches on 109 days, compared with 13.905 inches on 117 days in 1904, 19.072 inches on 131 days in 1903, 15.507 inches on 115 days in 1902, 11.432 inches on 93 days in 1901, 17.609 inches on 129 days in 1900, 14.416 inches on 107 days in 1899, 13.060 inches on 106 days in 1898, 15.600 inches on 125 days in 1897, 13.328 inches on 102 days in 1896, 7.935 inches on 80 days in 1887, and a thirty-five years' average of 14.620 inches on 113 days.

At the Normal Climatological Station in Trinity College, Dublin, the mean height of the barometer was 30.038 inches, the range of atmospheric pressure being from 30.286 inches at 9 p.m. of the 3rd to 29.699 inches at 9 a.m. of the 29th. The mean value of the readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 62.5°. The arithmetical mean of the daily maximal and minimal temperatures was 63.3°. The screened thermometers rose to 81.9° on the 14th, and fell to 49.0° on the 6th. On the 4th the grass minimum was 41.6°. On the 14th the black bulb *in vacuo* rose to 138.7°. Rain fell on 17 days to the amount of .776 inch, the greatest fall in 24 hours being .098 inch on the 9th. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 162.2 hours, of which 13.8 occurred on the 8th. In July, 1904, there were 201 hours of bright sunshine. The mean earth temperatures were—at 1 ft., 63.2°; at 4 ft., 58.6°. The one-foot thermometer ranged between 60.5° on the 4th and 66.3° on the 15th. The four-feet thermometer ranged from 57.5° on the 2nd to 59.5° on the 27th.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, County Dublin, the rainfall was .98 inch on 20 days. The maximal fall in 24 hours was .18 inch, measured on the 9th. The mean temperature was 64.4°, the range being from 80° on the 13th and 14th to 51° on the 27th. In July, 1901, 2.65 inches of rain fell at this station on 11 days; in 1902, 4.27 inches on 91 days; in 1903, 3.66 inches on 24 days; and in 1904, 1.22 inches on 17 days.

At White Cross, Stillorgan, Miss Muriel E. O'Sullivan measured .908 inch of rain on 18 days, the largest amount which fell in 24 hours being .139 inch on the 9th.

At Cloneevin, Killiney, Co. Dublin, Mr. Robert O'Brien Furlong, C.B., reports that the rainfall in July was 1.03 inches on 15 days, compared with a twenty years' (1885-1904) average of 2.578 inches on 15.3 days. On the 10th the rainfall was .24 inch. In July, 1904, only .77 inch fell on 15 days; in 1903 3.54 inches fell on 19 days; in 1902, 3.64 inches on 13 days; in 1901, 2.80 inches on 13 days; in 1900, 4.56 inches on 16 days; in 1899, 3.48 inches on 17 days; in 1898, .84 inch on 7 days; in 1897, 1.28 inches on 10 days; in 1896, 6.72 inches on 20 days. Since January 1, 1905, 13.59 inches of rain have fallen on 104 days at this station, compared with 18.38 inches on 129 days in the corresponding 7 months of 1900, 13.54 inches on 95 days in 1901, 16.90 inches on 111 days in 1902, 17.39 inches on 122 days in 1903, and 13.69 inches on 110 days in 1904. The lowest July fall was .70 inch on 9 days in 1885; the highest 6.72 inches on 20 days in 1896.

Mr. T. Bateman reports that the rainfall at the Green, Malahide, Co. Dublin, was .948 inch on 15 days. The largest daily fall was .190 inch on the 28th. The mean shade temperature was 63.3°, the extremes being—highest, 83.5° on the 14th; lowest, 41.0° on the 6th.

At the Ordnance Survey Office, Phoenix Park, rain fell on 16 days to the amount of .950 inch, the greatest rainfall in 24 hours being .140 inch on the 2nd. The total duration of bright sunshine was 154.8 hours, the longest daily sunshine being 15.6 hours on the 8th.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in July was 1.932 inches on 11 days, compared with 1.395 inches on 15 days in 1904, 2.790 inches on 17 days in 1903, 4.550 inches on 11 days in 1902, 2.390 inches on 10 days in 1901, 5.140 inches on 15 days in 1900, 3.480 inches on 14 days in 1899, 1.145 inches on 6 days in 1898, 1.625 inches on 10 days in 1897, and 5.726 inches on 16 days in 1896. Of the total rainfall .810 inch fell on the 10th. The total fall since January 1 has been 13.043 inches on 88 days, compared with 15.702 inches on 109 days in 1904, 20.230 inches on 107 days in 1903, 19.641 inches on 95 days in 1902, 16.060 inches on 85 days in 1901, 23.331 inches on 120 days in 1900, 22.990 inches on 109 days in 1899, 14.645 inches on 94 days in 1898, 19.750 inches on 116 days in 1897, and 13.082 inches on 77 days in 1896.

Dr. B. H. Steede reports that at the National Hospital for Consumption, Newcastle, Co. Wicklow, the July rainfall was

1.991 inches on 10 days, compared with 3.796 inches on 13 days in 1902, 4.309 inches on 22 days in 1903, and 2.256 inches on 17 days in 1904. The heaviest daily rainfall was .955 inch on the 12th. The rainfall from January 1 to July 31, inclusive, was 13.657 inches on 97 days, compared with 18.274 inches on 108 days in the first seven months of 1902, 23.855 inches on 130 days in that period of 1903, and 19.248 inches on 121 days in 1904.

The Rev. Arthur Wilson, M.A., returns the rainfall at the Rectory, Dunmanway, Co. Cork, at 2.100 inches on 14 days. The largest measurement in 24 hours was .505 inch on the 10th, but .490 inch fell on the 28th and .450 inch on the 25th.

According to Mr. W. Miller, the rainfall in Cork City was 1.70 inches, or one inch less than the average, and the rainy days were 12. The greatest fall was .54 inch on the 26th, up to which day only .48 inch had fallen. The mean temperature of the month was 61.5° , or 1.5° above the average for July. The thermometer rose to 76° on the 13th and fell to 45° on the 27th. The rainfall for 1905 up to July 31 was 19.99 inches on 113 days, compared with averages of 20.70 inches on 108 days respectively.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 63.0° , being the highest mean, and 2.4° above the average, for July during 15 previous years (1873-83 and 1901-1904). The extremes were—highest, 80.7° on the 14th; lowest, 48.5° on the 4th. At Bournemouth, the mean was 65.7° , the extremes being—highest, 80° on the 23rd; lowest, 50° on the 7th. The maximum was between 75° and 80° on 4 days at Kingstown, and on 14 days at Bournemouth. The mean daily range was 13.0° at Kingstown, and 16.6° at Bournemouth. The mean relative humidity was 73 per cent. The mean temperature of the sea at Sandycove bathing-place was 56.1° , being 1.9° below the average for the month during the previous 7 years. The total rainfall was 0.62 inches on 13 days, being 2.17 inches below the average for July during 15 previous years; at Bournemouth it was 0.36 inches on 9 days. The total duration of bright sunshine was 173.8 hours, compared with 154.8 hours at the Ordnance Survey Office, Phoenix Park, 142.5 hours at Valentia, 138.5 hours at Birr Castle, 268.1 hours at Hastings, and 256.3 hours at Bournemouth. On the 7th, 15.7 hours of sunshine was recorded, being the longest duration for any day since the beginning of the year 1901.

PERISCOPE.

HÆMORRHOIDS.

THERE are some important local anatomical predisposing causes of piles which must always be kept in mind. (1) The hæmorrhoidal veins, which contain no valves, are longitudinally arranged, and lie in the submucous tissue between the mucous membrane and muscular coats of the rectum. There are, however, circular rings of veins, situated at different levels, which connect the longitudinal veins. The longitudinal veins also pierce the muscular coat of the rectum, and, in this way, are liable to be compressed during straining, and the lower veins are ill supported during defæcation. (2) The superior hæmorrhoidal vein opens into the inferior mesenteric, the middle opens into the anterior division of the internal iliac, and the inferior opens into the internal pudic vein, which opens into the anterior division of the internal iliac vein, and, as the three hæmorrhoidal veins communicate with one another, there is here a free anastomosis between the systemic and portal venous systems, and these veins have to support the weight of the column of blood which is going to the liver. Besides these anatomical predisposing causes of piles, there are direct causes to be considered, thus there may be a hereditary tendency to varicose veins, due, doubtless, to the fact that the vein walls are badly developed. *Pressure* upon the pelvic veins, or obstruction to the flow of the portal blood, such as occurs with pregnancy, fibroids and ovarian cysts, cirrhosis of the liver and alcoholic excess; and some *straining* to pass urine, which occurs with stricture of the urethra, chronic enlargement of the prostate, and stone in the bladder, are also direct causes. Chronic constipation and the abuse of aloes must not be overlooked. Lastly, the possibility of local disease of the rectum, such as fibrous or malignant structure, must be remembered. We would emphasise the fact that, in all cases of hæmorrhoids, whether external or internal, it is most important to very carefully examine the rectum by digital exploration, so as not to overlook a possible local cause. The treatment of the condition must obviously depend upon the cause. For instance, should the cause be cirrhosis of the liver, the formation of the piles is Nature's method of relieving the portal congestion, and so long as the hæmorrhoids are there, and bleed, so long

will there be no ascites. The palliative treatment of hæmorrhoids consists in increasing the general tone of the patient by the use of tonics and cold baths, and in the administration of gentle laxatives, such as pulvis glycyrrhizæ compositus (3i to 3ii), or confectio sulphuris (3i to 3ii) and extractum cascariæ sagradæ liquidum (3i), which may be conveniently given early in the morning. The parts must be kept absolutely clean, a cold sponge or absorbent wool being preferable to hard paper, and an ointment such as unguentum gallæ or unguentum gallæ c. opio or unguentum hamamelidis may be locally applied. The following will be found a useful ointment:—℞ Extracti Hamamelidis Liq., 3ij; Cocainæ Hydrochloridi, gr. viij; Adipis Lanæ, 3ij; Adipis Præp., 3i; Misce. Ft. Ung. Should the patient have an "attack of piles," which usually means some inflammation with thrombosis, he should be put to bed, the lower bowel carefully cleared by a simple enema of warm water, hot boric acid fomentations should be applied, and, if the pain is very great, it may be relieved by a morphia suppository, containing $\frac{1}{4}$ grain of morphinæ hydrochloridum. Should the pain continue, it may be necessary to incise the inflamed pile and turn out the clot. Should these measures fail, and there be no other disease to which the piles are secondary, then some radical operation may be performed.—*The Practitioner*, August, 1905.

INDUSTRIAL MERCURIAL POISONING.

THE following Memorandum, FORM 332, signed by T. M. Legge, Medical Inspector of Factories, and countersigned by Arthur Whitelegge, Chief Inspector of Factories, has been issued by the Home Office, under date July, 1905:—*Notification*.—Every medical practitioner attending on, or called in to visit, a patient whom he believes to be suffering from mercurial poisoning contracted in any factory or workshop, is required by s. 73 of the Factory and Workshop Act, 1901, under penalty, to notify the case forthwith to the Chief Inspector of Factories; and is entitled to a fee of 2s. 6d. for so doing. Notification forms have been prepared for the purpose and are supplied to practitioners on application. Further (as when anthrax, or poisoning by lead, phosphorus or arsenic occurs) the occupier of the factory is required to send written notice of every case to the Certifying Surgeon and to the Inspector in charge of the district. It is the duty of the Certifying Surgeon to investigate and report

upon all cases thus brought to his knowledge, using for the purpose Form 190. He should also bear in mind the possibility of exposure to mercury as a circumstance to be considered in connection with the certification of children and young persons for employment in industries in which mercury is used (s. 645, 1901). Some persons are more readily affected by mercury than others. It does not appear that children are specially susceptible; but their employment in mercurial processes is clearly undesirable, by reason of the little attention to necessary precautions which can be expected of them. *Relation to Industry.*—The danger of mercurial poisoning in this country arises chiefly:—(1) In the manufacture of barometers and thermometers, from the volatilisation of the mercury in the processes of filling the tubes and from the scattering of mercury on the benches; (2) In hatters' furriers' workshops, from the brushing, after fur-pulling, of rabbit skins with an acid solution of nitrate of mercury (a process technically known as *carotting*), and in other stages subsequent to this—namely, stoving, cutting, locking and packing; (3) in gilding and silvering, generally known as water gilding, where an amalgam of gold or silver is applied to the objects and the mercury volatilised by heat; (4) in chemical works in which compounds such as corrosive sublimate, vermilion, or red oxide of mercury are manufactured; (5) in the manufacture of certain types of electrical meters. Apart from the use of mercury in metallurgical processes, other industries in which mercury is used and in which poisoning is possible, are:—(6) The manufacture of incandescent electric lamps, where mercurial pumps are used to produce a vacuum; (7) paint and colour works, where vermilion and anti-fouling paints are made; (8) bronzing with a solution of nitrate of mercury, as in bronzing the inside of field glasses; (9) explosive factories, from the use of fulminate of mercury. The "silvering" of mirrors by means of an amalgam of mercury and tin, which was in former years the chief industrial source of mercurial poisoning, has now only historical interest, as the process in question has been superseded by that of nitrate of silver and ammonia. Of 56 attacks reported between May, 1899, and December 31st, 1904, under s. 73, 1901, the distribution was as follows:—Thermometers, 15; electrical meters, 15; hatters' furriers, 10; chemical works, 7; water gilding, 5; powder factories, 3; photo engraving, 1. Mercury gives off vapour to a certain extent even at ordinary temperatures, but warmth greatly increases this tendency. When the metal,

as distinguished from its salts, is used, the danger of poisoning arises chiefly from inhalation of the vapour, and in a minor degree from swallowing or from absorption, in a finely divided state, by the skin. In the case of mercurial salts the usual mode of invasion is by swallowing. The vapour must first undergo condensation, and the globules so formed become oxidised before entering the system. The reactions which enable mercury to enter the circulation are only imperfectly understood. It is acted on more readily by salt solution than by dilute acids. The presence of both salt solution and free acid favours greatly the solution of the metal. Corrosive sublimate forms with albumen an albuminate insoluble in water, but readily soluble in the presence of salt solution. *Symptoms.*—Although in industrial mercurial poisoning the symptoms occasionally resemble those which result from the continued internal administration of full doses of mercury^a they are, as a rule, much slower in their onset and more insidious in character. The symptoms commence usually in the digestive tract, and for years the only signs may be gradual development of anæmia or sallowness, tendency to stomatitis with tenderness and spongy appearance of gums, occasional increase in the secretion of saliva, and more or less gastric disturbances, accompanied by diarrhœa. A blue line on the gums closely resembling that due to lead absorption is seen in a few cases. Sometimes the tonsils and pharynx become involved in the inflammatory processes affecting the mouth. Appetite is impaired, and the worker suffers from headache, giddiness, and transitory pains or feeling of numbness in the limbs. The mental condition undergoes change. Workers become affected by depression and a morbid timidity. Sleep may be interfered with and broken by nightmare. The most characteristic symptom of injury to workers in mercury is due to implication of the nerves and muscular systems, and is known generally under the term “mercurial tremor.” It is observed principally in the muscles of the face, hands, and arms; more rarely in the legs. At first it may amount only to slight tremulousness, accompanied by numbness and occasional pains in the joints, but gradually it advances until, in extreme cases, the movements become convulsive in character and the hand

^a Such as excessive salivation, swelling and ulceration of the gums, the formation of a yellowish deposit over the teeth and gums and fœtor of the breath, followed in severe cases by looseness and falling out of the teeth.

cannot be directed with certainty to any particular object. Speech, from involvement of the muscles of articulation, becomes slow and indistinct. The psychical conditions, known generally as mercurial erythism—nervousness, feeling of anxiety, sleeplessness—which are very constantly met with, may change to depression or despondency—hallucinations, loss of memory, and dulness of intellectual faculties are seen in advanced cases. The pernicious influence exerted by large doses of mercury on the uterine functions is well known, and miscarriage was noted as frequent in women exposed to the effects of mercury in the silvering of mirrors, as formerly practised. The influence of mercury in this respect has not been established with certainty in the industries in which it is now used. The condition of the teeth of persons exposed to the fumes of nitrate of mercury in hatters' furriers' processes deserves separate mention. The typical appearance in the teeth of those who have been engaged for years in "carotting" is loss of the molar teeth in the upper and lower jaws. The upper incisor and canine teeth are not infrequently absent, and such teeth as remain (generally the lower incisors and canines) are characteristically blackened and often loose. They show a marked tendency to erosion (a process quite distinct from caries, as the enamel and not the dentine suffers most) from the acid fumes, and frequently the gums recede, so that the anterior surfaces of the roots are exposed. Chronic mercurial poisoning does not often lead directly to death. Tremor, even when it has existed for several years, may not be so severe as to interfere with the capacity for work. It appears to lower the vitality of the tissues markedly, and the frequency with which workers die of phthisis has been noted. *Periodical Examination.*—The following points should be borne in mind by the Certifying Surgeon or other medical practitioner appointed by the occupier to examine periodically persons employed in mercurial processes, with power to suspend temporarily or permanently any worker who by continued work would incur special danger to health. The Health Register (Form 605) supplied in such cases has been drawn up in such a way that opposite the name of each person examined on any date a brief note can be made of the condition found. Any definite ill effects, if observed, can be further described in space set aside for the purpose. In all cases where suspension from work has been ordered, or reinstatement after suspension permitted, signed entry in the Register to this effect should be made by the Surgeon

in the space provided. In carrying out the periodical examination arrangements for obtaining due privacy are important. *Notification, Suspension, Warning.*—The necessity for notification does not arise until mercurial poisoning is diagnosed, but in deciding the question of suspension or fitness for work in mercury other considerations come in. Liability to injurious effects may be indicated by inferior physique, addiction to alcohol, present or past attacks of mercurial poisoning by careless personal habits, such as want of attention to cleanliness in hands, teeth, or clothing, or by biting of the nails. Cases will present themselves at the periodical examination in which the symptoms are so pronounced, even although there may still be capacity to work, as to warrant notification as well as suspension. By means of periodic examination a proper hygiene of the mouth (of special importance where mercury is concerned), with regular use of tooth brush and dentifrice, can be insisted on. Experience in factories where such examinations are regularly made shows that symptoms of mercurial poisoning are exceptional in those whose teeth are sound and kept clean.*

ROYAL ARMY MEDICAL SERVICE.

THE under-mentioned gentlemen were successful at the recent examination in London for Commissions in the Royal Army Medical Corps, and for which 60 candidates entered :—

MARKS.	NAMES.
582	John Allan Anderson, M.B., Ch.B. (Edin.).
577	Cuthbert Garrard Browne, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
568	Hugh Godwin Sherren, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
560	Henry Horace Andrews Emerson, M.B., B.Ch. (Dubl.).
549	Wallace Benson, M.B., B.Ch. (Dubl.).
548	Rowland Philip Lewis, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
543	George Edward Ferguson, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
538	James Herries Graham, M.B., B.S. (Durham).
529	Charles Ernest White Spinner Fawcett, M.B., B.Ch. (Dubl.).
519	Thomas Scatchard, L.S.A. (Lond.).

* A mouth wash of alum gr. 5, potassium chlorate gr. 5, glycerine dr. $\frac{1}{2}$ and water to the ounce, is useful when the gums are soft and inflamed

- 502 Ronald Anderson Bryden, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
- 499 } Arthur Edmund Stewart Irvine, L.R.C.P. & S. (Ireland).
- 499 } Thomas Bettesworth Moriarty, L.R.C.P. & S. (Ireland).
- 499 } Alexander Macgregor Rose, M.B., B.S., (Aber.), D.P.H. (Aber.).
- 497 Edward Lawton Moss, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
- 495 } Edward Guy Anthonisz, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
- 495 } Griffith Henry Rees, M.B., B.S. (Lond.), M.R.C.S. (Eng.), L.R.C.P. (Lond.).
- 484 Vivian Hood Symons, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
- 482 Walter John Weston, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
- 480 Mortimer John Cromie, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
- 479 } Percy Farrant, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
- 479 } Albert Edward Francis Hastings, L.R.P.C. & S. (Ireland).
- 474 George William Webb Ware, M.B., B.Ch., R.U.I.
- 473 Michael Balfour Hutchison Ritchie, M.B., B.S. (Aber.).
- 470 James Stuart Dunne, F.R.C.S.I., L.R.C.P.I.
- 466 William McConaghy, M.B., B.Ch. (Edin.).
- 461 } Francis Cornelius Sampson, M.B., B.Ch., R.U.I.
- 461 } Charles Francis White, M.B., B.Ch., R.U.I.
- 453 Cecil John Wyatt, M.B., B.Ch. (Dubl.).
- 450 Wilfrid Cowan Nimmo, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
- 488 Edmund Thurlow Potts, M.D., Ch.B. (Edin.).
- 445 } Michael Keane, L.R.C.P. & S. (Ireland).
- 445 } Arthur Drought O'Carroll, M.B., B.Ch., R.U.I.
- 441 Robertson Stewart Smyth, M.D., B.Ch. (Dubl.).
- 439 } Arthur James Arch, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
- 439 } Thomas Somers Blackwell, L.R.C.P. & S. (Ireland).
- 439 } Harold Edgar Priestley, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
- 426 Alan Cuncliffe Vidal, L.R.C.P. & S. (Edin.), L.F.P. & S. (Glasgow).
- 425 Philip Jauvrin Marett, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
- 423 Hugh Stewart, M.B. B.Ch. (Dubl.).

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XIII.—*Sir Thomas Browne, Knight; Doctor of Physick; Anti-Cromwellian Loyalist; Witch-Finder; Amateur Exponent of Christian Doctrine; Conservative Opponent of Scientific Innovation; and Iconoclastic Critic of the Errors of the "learned Vulgar," with their "Authorities."* By JOHN KNOTT, M.A., M.D., Ch. B., and D. P. H. (Univ. Dub.); M.R.C.P.I.; M.R.I.A., &c.

THE representative men of the capital of East Anglia will assemble on October 19 to do public honour to the memory of one of its most illustrious dead of a past century. The date referred to will be the tercentenary anniversary of the birth of Sir Thomas Browne, who was born in London in 1605. (By an extremely uncommon, if not very interesting, coincidence the same date corresponds to the anniversary of his death.) He was, accordingly, junior by five years to the ill-fated monarch, Charles I.; and he attained his majority in the course of the annual cycle in which the mantle of modern philosophy dropped from the shoulders of Francis Bacon, to alight, as the scientific seers have pointed out to posterity, on the infant form of Robert

Boyle. In the earlier years of his life he was thus a contemporary of Shakespeare, of Galileo, of Kepler, of Napier, of Descartes, of Sarpi, and of Cervantes; in middle age, of Huyghens, of Malpighi, of Sydenham, and of Pascal. He had attained the fairly ripe age of forty-two at the time of the death of William Harvey, and was forty-seven at the demise of Inigo Jones. Ten years before the latter date there had occurred another of the curious spiritual successions which visionaries have detected in scientific history; the year of grace 1642 was rubricated for all time in the annals of genius by the death of Galileo Galilei and the birth of Isaac Newton. Accordingly, Thomas Browne performed his earthly pilgrimage in an age of rare—it might, perhaps, be said, unprecedented—activity. In his own country a period of terrible unrest intervened, which could not fail to exercise a hindering, and even destructive, influence in some directions. But it seems to have very little affected the even tenor of his way in life—which was essentially that of the ideal medical practitioner and unwearying seeker after truth. The biographies of such men seldom furnish striking details; and those of Browne's career are so few that an English journal expressed a few weeks ago some curiosity as to how Mr. Edmund Gosse will be able to make a book out of the available material—as he has been engaged to do by Messrs. Macmillan—for the “English Men of Letters” Series. The conclusion was: “Mr. Gosse will need to show as much ingenuity as did Professor Bury in writing the *Life of St. Patrick*.” The man is, accordingly, to be judged by his writings: of few men can it be said with so much pregnant significance, that by his fruits he is known. That he was the son of a prosperous merchant, and left an orphan—with mother and fortune—as a child; was cheated and bullied by his guardian when his mother married; was sent to school at Winchester, from which he passed to Oxford; practised physic for some time in Oxfordshire; “quitted his settlement, and accompanied his father-in-law, who had some employment in Ireland, in a visitation of the forts and castles, which the state of Ireland then made necessary;” that

he passed into France and Italy; stayed for some time at the Universities of Montpellier and Padua—then the leading medical schools of Europe; and returning, *viâ* Holland, entered the then equally celebrated University of Leyden—from which he received the degree of “Doctor of Physick”; was in London about 1634; is said to have written the famous “Religio Medici” in 1635; that he settled in Norwich in 1636; was made a Doctor of Physick in Oxford in 1637; that he married in 1641; published his “Pseudodoxia Epidemica” in 1646, and other interesting works, of less importance and smaller bulk, at subsequent intervals; was made an Honorary Fellow of the Royal College of Physicians in 1665; that he was knighted by Charles II., on the occasion of that monarch’s visit to Norwich in 1671; and that he died on October 19, 1682—on the anniversary of his birthday, having exactly completed a life-span of seventy-seven years. These are the main facts of Sir Thomas Browne’s career known to posterity, and we believe that few others of much interest can be added to them at present—or are likely to be so added at any future date.

It is almost superfluous to state that Browne is best known to posterity as the author of the “Religio Medici.” Indeed the great majority of “well-read” graduates, and even the average journalist, hardly associates his name with the profession or practice of medicine. The independence of thought displayed in the pages of this volume necessarily called down upon the author the charges of deism and atheism, and although he always professed himself a devout believer in the doctrines of “the reformed religion; of the same belief our Saviour taught, the apostles disseminated, the fathers authorised, and the martyrs confirmed,” the insinuation was widely repeated by detractors who were unqualified to convict the author of error; or, probably, to comprehend his views. Accordingly, it is highly refreshing to find even the rough and rigid Samuel Johnson declaring that “it is no difficult task to replace him among the most zealous professors of Christianity.” Indeed, as Browne declares that he “blesses himself that he lived not in the days of

miracles, when faith had been thrust upon him; but enjoys that greater blessing, pronounced to all that believe and saw not," it is necessary to believe that he either deceived himself, or took unasked-for trouble to deceive his readers, in making such profession, if his Christian faith were not truly genuine. The famous "Religio" was first printed, without the author's (avowed) consent, in 1642; having been written some (seven?) years previously for his own "exercise and entertainment," and circulated during the interval in manuscript among his more intimate friends. In commenting on this incident, Dr. Johnson displays, perhaps, some of the very best examples of his elephantine subtlety. One of the notable incidents connected with the original publication of the volume resulted from its having been recommended by the Earl of Dorset to the critical scrutiny of Sir Kenelm Digby—the famous "authority" on "Bodies," "Souls," "Vital Air," and most other subjects of engrossing interest at the period. According to the written statement of that noted connoisseur—in reply to his lordship's communication—*twenty-four hours* sufficed for him to procure the book, read it through, and write out a critical comment, which was printed with some of the later editions of the "Religio" itself! The perusal of the statement, and of the document which it accompanied, recalls forcibly the respective judgments of Evelyn, who pronounced Digby "an arrant mountebanke," and of Stubbes, who dubbed him "the very Pliny of our age for lying." One or two items of the contents elicited a good deal of raillery in connection with his marriage. The author had expressed a desire for a state of things in which "we might procreate, like trees, without conjunction," as one of higher dignity for the genus *homo*—an expression of opinion not flattering to the physical attractions of woman. He also pointed out, in this connection, that "the whole world was made for man, but only the twelfth part of man for woman"; and, further, that "man is the whole world, but woman only the rib or crooked part of man." However, his own

conjugal career of forty-one years appears to have been an exceptionally bright one.

Our author's largest, and perhaps most representative, work was published with a title-page whose contents are worded as follows:—

“Pseudodoxia Epidemica: OR, ENQUIRIES INTO very many received TENENTS, and commonly presumed TRUTHS. By THOMAS BROVNE Dr. of Physick. IUL. SCALIG. *Ex Libris colligere quæ prodiderunt Authores longe est periculosissimum; Rerum ipsarum cognitio vera è rebus ipsis est.* LONDON, Printed by T. H. for Edward Dod, and are to be sold in *Ivie Lane.* 1646.”

As a genuine monument of the author's thirst for knowledge, and critical zeal in the pursuit of truth, the testimony afforded by this volume is unquestionable in quality and colossal in quantity. Its pages—one and all—demonstrate the fact that the author had “taken all knowledge for his province,” as the great Lord Chancellor Bacon professed himself, in the preceding generation, to have already done. Browne did so less dictatorially—or, shall I say, pastorally—but surely far more successfully. In this connection I cannot refrain from calling my readers' attention, parenthetically, to the glaring contrast presented by the comparison of the contents of Browne's “Vulgar Errors,” as this work is usually called, and Bacon's “Natural History.” Both are really scientific “common-place books”; mounds monumental of the knowledge which specially appealed to the intellect, and excited the curiosity, of the collector; and, accordingly, a more penetrating lateral—if not direct—illumination is thrown by each on the tastes and attainments of its author than is, perhaps, by any of their more formally arranged and polished volumes—specially tricked out and embroidered to gratify the mental palate of the general reader. But what an immeasurable distance is represented by these volumes—between the scientific acquirements of their authors! As Johnson judiciously remarks regarding Browne's work, it “must have been the collection of years, and the effect of a design early formed and long pursued, to which his remarks had been

continually referred, and which arose gradually to its present bulk by the daily aggregation of new particles of knowledge." Every page shows the author's untiring enthusiasm for truth, and the many weak points in his scientific armour are easily detected by the eye of the initiated. As in the case of Bacon's "*Novum Organum*," "the first booke, containing the generall part," can best bear quotation at the present day. The writer's "general" advice and suggestions to the reader are really excellent. But the physical reasoning and the physical demonstration of the seventeenth century were things very different to the corresponding processes in the twentieth, as this volume well shows! The introspective zeal of scholastic philosophy would almost seem to have turned the mind's eye permanently inwards, and so given it a strabismic axis which could not be adapted to the scrutiny of external nature. The still immature (human) kitten was still persistently engaged in trying to catch its own (intellectual) tail—till the earthquake-and-thunderclap explosions of the Renaissance disturbed the time-honoured system of gymnastics. The value of the results to the twentieth-century citizen is still variously estimated. If there had been no heretics in the sixteenth century, there is a good deal to be said in favour of the probability that there would be no motor-cars in the twentieth. Whether humanity would not have remained as happy and noble without both or either is too large a question for present discussion.

The author's high ideal of man's pursuits and possible attainments is well represented in one of the early pages: "For great constitutions and such as are constellated unto knowledge, do nothing till they outdoe all. . . . God expects no lustre from the minor stars, but if the Sun should not illuminate all it were a sin in Nature. . . . *Nos numerus sumus* is the motto of the multitude, and for that reason are they fooles. For things as they recede from unity, the more they approach to imperfection, and deformity; for they hold their perfection in their simplicities and as they neerest approach unto God." The variety of "naturall parts," too, goes to

explain "why though Universities bee full of men, they are oftentimes empty of learning. Why as there are some which do much without learning, so others but little with it, and few that attaine to any perfection in it. For many heads that undertake it, were never squared nor timbered for it." The central text of the whole volume, and its characteristic key-note from beginning to end, appear in the following sentences: "But the mortallest enemy unto knowledge, and that which hath done the greatest execution upon truth, hath beene a peremptory adhesion unto Authority, and more especially the establishing of our beliefe upon the dictates of Antiquities. For (as every capacity may observe) most men of Ages present, so superstitiously look on Ages past, that the authorities of the one exceed the reasons of the other. Whose persons indeed being farre removed from our times, their works which seldome with us passe uncontrouled, either by contemporaries or immediate successors, are now become out of the distance of envies. And the farther removed from present times, are conceived to approach the neerer unto truth it selfe." Even till that date, and later, the overwhelming "authority" of Aristotle loomed over the whole intellectual horizon of the civilised world—and of its individual inmates. I have reckoned 121 references in the pages of this work to the personality and doctrines of the immortal Stagirite. Most are, of course, critical; some very severely so.

The great general store-house of "Natural History," and the variegated lore therewith associated, was, of course, the colossal work of the elder Pliny. Of this "authority" Browne observes: "Now what is very strange, there is scarce a popular error passant in our dayes, which is not either directly expressed, or diductively contained in this worke, which being in the hands of most men, hath proved a powerfull occasion of their propagation; wherein notwithstanding the credulitie of the Reader, is more condemnable then the curiositie of the Authour." To the author of this inexhaustible fountain of error there are, at least, 84 references in the pages of the "Pseudodoxia Epidemica." They make highly

entertaining reading; the perusal of them impresses one with the common kinship of humanity, for a good few of the "tenents"—including some therapeutic ones—were current in my boyish days among the illiterate peasantry of the West of Ireland, and have representative relations planted among remote savage tribes at the present day.

Extracts can hardly enlighten the general reader much regarding the contents of Browne's own work; the specimen brick taken from an (unseen) house uniformly built of such is a proverbially bad criterion of the value of the mansion; how much more so when all the bricks vary in bulk and quality? Some items are at the present date specially demonstrative of the progress of physical knowledge since the date of their dictation. He discusses the rumour regarding the sympathy of two magnetic needles which had been "excited" by the same loadstone. "Famianus Strada, that elegant Jesuit" of the fifteenth century, "blew it about" that if a pair of such needles were balanced, each in the centre of a circular alphabet, when one was made to point to a certain letter, the other performed the same indication. Browne's zeal induced him to carry out the experiment for himself—with a negative result. The second needle "stood like the pillars of Hercules." Johnson's comment is characteristic: "That it continued motionless will be easily believed; and most men would have been content to believe it without the labour of so hopeless an experiment." It had been suggested that two distant friends might be able to correspond at stated hours in this way; and the whole is strangely prophetic of the now ubiquitous telegraph. Browne does not digress widely in the direction of medical opinion—sound or unsound. A partial exception is found in connection with the physiology of generation. He refers to the occurrence of *superfætation* in hares and in the human being; criticises Aristotle's tests of the "fertility of humane seed": that a specimen "which is not watery and improlificall will not conglaciate"; and that of various specimens of "the sperme and seminall humor of man," the sound and healthy sink

in water, whereas “such as are corrupted and sterill swim”; and rejects the testimony of Averroes regarding the case of a woman who “conceived in a bath, by attracting the sperme or seminall effluxion of a man admitted to bathe in some vicinity unto her,” with the added comment that: “’Tis a new & unseconded way in History to fornicate at a distance, & much offendeth the rules of Physick, which say, there is no generation without a joynt emission, nor only a virtuell but corporall and carnall contactation.”

The hankering after knowledge of every kind, and the desire to arrange his acquisitions for the enlightenment of others, which characterised our author throughout life, are correspondingly illustrated in his “Hydriotaphia,” “Garden of Cyrus,” “A Letter to a Friend,” and also in his posthumous works. Of the “Christian Morals” it has recently been said by one of the most accomplished of living critics, that it is “‘glorious enough within’ to deserve that its clothing should be of velvet calf if not of wrought gold.” Its style is said to have been taken by Dr. Johnson as his model; it is also said to have been formed by its author on that of the “Book of Proverbs.” In this, as in all his writings, his charitable forbearance is powerfully—if negatively—illustrated by his strict avoidance of all reference to the great troubles of the very disturbed time in which he lived.

Browne’s professional attainments cannot be estimated from his writings—in which he is almost as reticent on professional as on political problems. I believe that the best estimate now attainable can be made from the contents of the following letter, which is said to have been written to Dr. Henry Power (author of a work on “Experimental Philosophy,” of considerable note in his generation):—

“*Ἐκ Βιβλίου κυβερνήτα* [*i.e.*, statesman from the book] is grown into a proverb; and no less ridiculous are they who think out of book to become physicians. I shall therefore mention such as tend less to ostentation than use, for the directing a novice to observation and experience without which you cannot expect to be other than

ἐκ βιβλίου κυβερνήτης. Galen and Hippocrates must be had as fathers and fountains of the faculty. And, indeed, Hippocrates' *Aphorisms* should be conned for the frequent use which may be made of them. Lay your foundation in anatomy, wherein *ἀντοψία* must be your *fidus Achates*. The help that books can afford you may expect, besides what is delivered *sparsim* from Galen and Hippocrates, Vesalius, Spigelius, and Bartholinus. And be sure you make yourself master of Dr. Harvey's piece *De Circul. Lang.*; which discovery I prefer to that of Columbus. The knowledge of plants, animals, and minerals (whence are fetched the *Materia Medicamentorum*) may be your *πάρεργον*; and, so far as concerns physic, is attainable in gardens, fields, apothecaries' and druggists' shops. Read Theophrastus, Dioscorides, Matthiolus, Dodonæus, and our English herbalists: Spigelius's *Isagoge in rem herbarium* will be of use Wecker's *Antidotarium speciale*, Renodæus for composition and preparation of medicaments. See what apothecaries do. Read Morelli *Formulas medicas*, Bauderoni *Pharmacopœia*, *Pharmacopœia Augustana*. See chymical operations in hospitals, private houses. Read Fallopius, Aquapendente, Paræus, Vigo, &c. Be not a stranger to the useful part of chymistry. See what chymistators do in their officines. Begin with *Tirocinium Chymicum*, Crollius, Hartmannus, and so by degrees march on. *Materia Medicamentorum*, surgery and chymistry, may be your diversions and recreations: physic is your business. Having, therefore, gained perfection in anatomy, betake yourself to Sennertus's *Institutiones*, which read with care and diligence two or three times over, and assure yourself that when you are a perfect master of these institutes you will seldom meet with any point in physic to which you will not be able to speak like a man. This done, see how institutes are applicable to practice, by reading upon diseases in Sennertus, Fernelius, Mercatus, Hollerius, Riverius, in particular treatises, in counsels, and consultations, all of which are of singular benefit. But in reading upon diseases satisfy yourself not so much with the remedies set down

{although I would not have these altogether neglected) as with the true understanding the nature of the disease, its causes, and proper indications for cure. For by this knowledge, and that of the instruments you are to work by, the *Materia Medicamentorum*, you will often conquer with ease those difficulties through which books will not be able to bring you; *secretum medicorum est judicium*. Thus have I briefly pointed out the way which, closely pursued, will lead to the highest pitch of the art you aim at. Although I mention but few books (which, well digested, will be *instar omnium*), yet it is not my intent to confine you. If at one view you would see who hath written, and upon what diseases, by way of counsel and observation, look upon Moronus's "Directorium Medicopracticum." You may look upon all, but dwell upon few. I need not tell you the great use of the Greek tongue in physic; without it nothing can be done to perfection. The words of art you may learn from Gorreus's *Definitiones Medicæ*. This and many good wishes,—From your loving friend, THOMAS BROWNE."

This document goes to show that the writer was quietly and conscientiously conservative in medicine as in politics, and had spared no pains in obtaining a mastery of the knowledge available in his day. He made no advertising inventions; can we be sure that his patients—in the average results of his whole practice—suffered seriously in consequence? I would suggest that Browne's "general" view of medical knowledge, and the application of the same to the treatment of disease and preservation of health, bore a very suggestive resemblance to that outlined by Francis Bacon in the *De Augmentis Scientiarum* (1623)—of which the English version, by Wats, appeared in 1640. In illustration of this idea, I quote a passage of some length from the latter inspiring volume: the more freely as I think it shows Bacon's special powers at their very best; and is not to be found, I believe, in most recent reprints of "The Advancement of Learning":—

" . . . This various and subtile composition and fabrick of mans body hath made it, as a curious and

exquisite instrument, easie to be distemper'd; therefore the Poets did well to conjoyn *Musick and Medicine* in *Apollo*; because the *Genius of both these Arts is almost the same*; and the office of a Physician consisteth meerly in this, to know how to tune, and finger this Lyre of mans body; that the Harmony may not become discordant and harsh. So then this inconsistency, and variety of the subject, hath made the Art more conjectural: And the Art being so conjectural had given more large scope, not only to error, but even to imposture. For almost all other Arts and Sciences are judg'd by their power and operation; and not by their success and work. The lawyer is judg'd by the virtue of his pleading, and not by the issue of the cause; the Master in the Ship approves his Art, by the directing his course aright, and not by the fortune of the voyage: But the Physician, and perhaps the Politick, hardly have any proper particular Acts, whereby they may make a clear demonstration of their Art and abilities; but bear away honour or disgrace principally from the event which is ever an unequal judicature. For who can tell if a Patient dye or recover; or if a State be preserved or ruined; whether it be by Art or Accident? Therefore it often falls out, that the Impostor bears away the Prize, Virtue the Censure. Nay the weakness and credulity of men is such, As they often prefer a Mountebank, or Witch, before a Learn'd Physician. Therefore the Poets were clear and quick-sighted, when they made *Æsculapius* and *Circe*, Brother and Sister; both children of the Sun, as in the Verses; of *Æsculapius* the Sun's Son,

Ille repertorem Medicinæ talis, & Artis,
Fulmine Phœbigenam Stygeas detrudit ad undas;

and likewise of *Circe*, the Sun's Daughter,

Dives inaccessos ubi solis filia lucos
Assiduo resonat cantu: tectisque superbis
Urit odoratam nocturna in lumina Cedrum.

For in all times in the reputation and opinion of the Multitude, Witches, and old Women, and Impostors have been rival competitors with physicians; and have even contended with them for the fame of cures. And what

I pray you follows? Even this, that physicians say to themselves, as Solomon expresseth it upon a higher occasion, *If it befalls to me, as it befalls to the fool, why should I labour to be more wise?* And, therefore, I cannot much blame physicians if they use commonly to intend some other Art, or Practice, which they fancy more than their Profession: For you shall have of them Poets, Antiquaries, Criticks, Rhetoricians, Politicks, Divines, and in these Arts better seen than in their own Profession. Nor doth this come to pass, as I suppose, because (as a certain Declaimor against Sciences, objects against Physicians) they have ever conversant before their eyes such loathsome and sad spectacles, that they must needs retire their minds from these objects to some other contemplations; for as they are men, *Nihil humani à se alienum putent*, but for this reason, whereof we now speak—namely, that they find, *that Mediocrity, and excellency in their Art maketh no difference in profit or reputation towards their Persons or Fortunes.* For the vexations of sickness; the sweetness of life, the flattery of hope, the commendation of friends, maketh men to depend on Physicians with all their defects: But if a man seriously weigh the matter, these things rather redound to the imputation of Physicians, than their excusation: who should not for these prejudices cast away hope; but encrease their pains and diligence. For whosoever pleaseth to excite and awake his observation, and a little look about him, shall easily deprehend even from common and familiar examples what a command and sovereignty the subtilty and sharpness of the understanding hath over the variety either of matter, or of the form of things. *Nothing is more variable than mens faces and countenances;* yet the memory retains the infinite distinctions of them. . . . *Nothing more variable than mans voice;* yet we can easily discover their differences in every particular person. . . . *Nothing more variable than articulate sounds of words,* yet men have found a way to reduce them to a few Letters of the Alphabet. And this is most certain, *that it is not the insufficiency, or incapacity of man's mind; but rather the remote standing, or placing of the object that breeds*

these Mazes, and Incomprehensions. For as the sense afar off is full of mistaking; but within due distance errs not much; so it is in the understanding. *For men use commonly to take a prospect of Nature, as from some high Turret, and to view her afar off; and are too much taken up with generalities, whereas if they would vouchsafe to descend and approach nearer to particulars; and more exactly and considerately look into things themselves; there might be made a more true and profitable discovery and comprehension.* Now the remedy of this error is not alone this, to quicken or strengthen the *Organ*, but withal to go nearer to the object: and therefore there is no doubt but if Physicians, letting generalities go for a while, and suspending their assent thereto, would make their approaches to Nature; they might become Masters of that Art, whereof the Poet speaks:—

Et quoniam variant morbi, variabimus Artes;

Mille mali species, mille salutis erunt.

Which they ought the rather to endeavour because the Philosophers themselves, upon the which Physicians, whether they be Methodists, or Chymists, do relye (*for Medicine not grounded upon Philosophy is a weak thing*) are indeed very slight and superficial. *Wherefore if too wide generalities, though true, have this defect, that they do not well bring men home to Action; certainly there is greater danger in these generals, which are in themselves false, and instead of directing to truth, mislead the mind into the by-paths of Error.*

Medicine, therefore (as we have seen), hitherto hath been such, as hath been more professed, than laboured; and yet more laboured than advanced; seeing the pains bestowed thereon, hath been rather in circle, than in progression. For I find much Iteration but small Addition in Writers of that Faculty."

Having regard to the fact that this passage was thought out and composed by a lawyer, whose facts in physic were, necessarily, almost wholly second-hand, and whose generalisations on the subject were evolved from his inner consciousness—thus reflecting the composite impressions

which had been made by the testimony of sundry and manifold witnesses—I incline to regard it as evidence of a closely similar conformation of some of the principal intellectual facets of the respective geniuses of Francis Bacon and Thomas Browne.

If Browne proved too rigidly conservative with regard to the teaching of Ptolemy regarding our solar system, he rather let himself go in his natural history, when he suggests that: “it may be perpended whether it might not fall out the same way that Jacobs cattell became speckled, spotted, and ring-straked, that is, by the power and efficacy of Imagination; . . .” and enunciates what may be fairly regarded as a pre-Darwinian suggestion of the influence of climate and environment on animal “complexion”: “induced first by Imagination, which having once impregnated the seed, found afterward concurrent productions, which were continued by Climes, whose constitution advantaged the first impression. Thus Plotinus conceaveth white Peacocks first came in: Thus as Aldrovand relateth, many opinion that from aspection of the Snow which lyeth long in Northerne Regions, and high mountaines, Hawkes, Kites, Beares, and other creatures become white; and by this way Austin conceaveth the Devill provided, they never wanted a white spotted Oxe in Ægypt, for such an one they worshipped, and called it Apis.”

This last sentence brings before the reader one of the realistic references to the monarch of the nether regions in which our author's writings abound. The works of St. Augustine (“Austin,” “Austine” of the *Pseudodoxia*) must have occupied many of Browne's most thoughtful hours, for they are frequently referred to. And the great Bishop of Hippo had hardly a more vivid conception of the active existence of a personal devil than had the author of the “Religio Medici.” Indeed, in regard to this article of belief, and the correlated one concerning the existence of witches, Thomas Browne may be rated as a direct disciple of Martin Luther. And as those items of his life-work, which he founded on the basis of that very prominent corner-stone of his *religious*

faith, form the head and front of the principal cause discovered by the *advocatus diaboli* why the occurrence of the tercentenary anniversary of his birth should not be celebrated with special rejoicings and monumental honours, I propose to examine at some length the validity of the accusation which has been based thereon. In order to form anything approaching a fair opinion regarding Browne's belief in witches and witchcraft, a somewhat wider knowledge of the opinions of his generation is necessary than is obtainable from the pages of the ordinary historical text-books. Contemporary existence is much more vividly reflected—even if occasionally distorted—by the partisan pamphlets and doggerel lampoons. And the skilled student will never fail to glean knowledge from between the lines.

Before examining individual witnesses on the subject, the reader should be reminded that the belief in witchcraft in some shape appears to have formed an article of primitive faith, in every age and every nation. Indeed it appears to have been as widely dispersed as the human race itself. It still claims the high authority of the sacred text; and—strange as it may appear to the over-educated of my readers—it has not yet disappeared from the great communities of modern civilisation, not even from the enlightened and critical American Republic! Specialists in history tell us that the Scriptural text which, with a single exception, has caused the greatest amount of destruction of life, and the associated horrors of barbarous tortures and exile and all conceivable miseries, is to be found in the commandment: "Thou shalt not suffer a witch to live." It is useless to reflect now that many of the higher critics of the present day regard the word *witch* as a mistranslation, and point to the Septuagint version in corroboration of this view. Witchcraft was always recognised by the Church; but the belief therein became far more prolific of results when the smouldering embers of theological zeal were blown into white heat by the violent currents of the Reformation. Witchcraft and demoniacal possession were specially favoured tenets of Martin Luther and of

John Calvin, and the general belief of the various sects that their opponents were the favoured followers of his sable majesty gave those items of belief a degree of substantiality which they had never before possessed. It was also held by some leaders of thought in that age to be "a very safe belief to be held by the common people."

Preliminary warnings of the larger demoniacal developments of the near future had arisen in the latter part of the fifteenth century. They were sufficiently emphatic to elicit a Bull from Pope Innocent VIII., in which he called upon the Catholic hierarchy of Germany to aid the Inquisitors in the endeavour to eradicate the plague of witches—who were described as volunteers in the service of Satan, and revellers in the blackest crimes. The first (dated) edition of the (now blood-curdling) *Malleus Maleficarum*—the authoritative manual of instructions for dealing with the persons and conditions of the accused and suspected—is of 1489; but it is said to have been printed some years before. The pages of many of the early editions of Luther's German Bible swarm with representations of demons, imps, &c.—with their servants and victims; which could not fail to impress such *revealed* facts of the unseen world indelibly on the early receptive imaginations of their Protestant readers. And the energetic reformer himself not only recognised the supra-terrestrial presence of such malignant spiritual entities, but even peopled the waters under the earth—at least some of the local reservoirs—with such tenants. He declared that the throwing of a stone into a certain pond of his native territory would infallibly cause a dreadful storm, by disturbing the devils who were imprisoned therein! Johann Eck, the theological gladiator who was put up by the Church authorities to confute Luther in public disputation, issued an edition of the (then infallible) Aristotle's "Physics" (Augsburg, 1519), in which the woodcut which illustrates the earth's atmosphere vividly depicts amid the cloud-strata of mid-air the physiognomical types of the devils who had supreme control in

that domain. The wonderful folio of the famous Jesuit, Martin Delrio (*Disquisitiones Magicæ*, Liège, 1599-1600) remained throughout the seventeenth century the great orthodox authority on witchcraft, demoniacal possession, and the manifold phenomena produced by the exercise of the malignant influence of the "Prince of the Powers of the Air"; and would appear to have been treated with almost equal respect by Protestants and Catholics. The fanatical views on witchcraft promulgated in 1684 by the President of Harvard College (and Boston pastor), Increase Mather, in his *Remarkable Providences*, were re-echoed from the old country with the warm approval of Richard Baxter, the author of the celebrated volume which bears the title of "The Saints' Everlasting Rest". And, although the fact is now seldom remembered in our electrical twentieth century, the power of that same *Prince of Air* was all but universally admitted by the bulk of the inhabitants of Christian (as well as of heathen) nations. When Benjamin Franklin drew down the lightning from the thunder-cloud along his damp kite-string—then, and not till then, was his throne overturned, and Christendom emancipated from the terrors of his tyranny! To those of my readers, however, who hug themselves with the idea that all traces of it belong to a now comparatively remote and irrevocable past, I would commend the perusal of the Rev. W. Scott's *Doctrine of Evil Spirits Proved* (London, 1853); and Dean Burgon's energetic comment on the substitution of "epileptic" for "lunatic" in Matt. xvii., 15, by the revisers of the authorised version of that Gospel (*Quarterly Review*, January, 1882).

The pioneers of light and leading had their full share of persecution. In the endeavour to popularise the truth in this connection, Flade sacrificed his life, Cornelius Agrippa his liberty, Wier and Loos their chances of preferment, Bekker his position, and Thomasius his reputation and friends. Reginald Scot's *Discovery of Witchcraft* (London, 1584) was consigned, at the hand of the public hangman, to the flames, which would have been ungrudgingly applied to the author by the British

Solomon, had an opportunity been available. But, as that pious and learned monarch could not catch the author, he had all available copies of his book destroyed; and, published under his own royal name, a counterblast to its influence, in the shape of a volume of *Dæmonologie, in forme of a Dialogue*. This is included in the stately folio volume of his collected works published in 1616. The preface informs the reader that the motive of the work is directed “against the damnable opinions of two principally in our age, whereof the one called *Scot*, an Englishman, is not ashamed in publike print to deny that there can be such a thing as Witchcraft: and so maintaines the old error of the Sadduces in denying of spirits; The other called *Wierus*, a German Physition, sets out a publike Apologie for all these craft-folkes, whereby procuring for their impunitie, he plainly bewrayes himselfe to have bene one of that profession.” “*Philomathes* and *Epistemon* reason the matter” through the royal author’s text of three books. A short extract will give some idea of the value of the affirmations and arguments therein used: “This reason then mooues me, that as he is that same diuell, and as crafty now as he was then, so he will not spare as perdy in these actions that I have spoken of, concerning the Witches persons: but further, Witches oft times confesse, not only his conueening in the Church with them, but his occupying of the Pulpit; Yea, their forme of adoration, to be the kissing of his hinder parts: which though it seeme ridiculous, yet may it likewise be trew, seeing we reade that in *Calicute*, he appearing in form of a Goat-bucke, hath publikely that vn-honest homage done vnto him, by euery one of the people: So ambitious is he, and greedy of honour (which procured his fall, that he will euen imitate God in that part, where it is said, that *Moyse* could see but the *hinder parts of God*, for the *brightnesse of his glory*: And yet that speech is spoken but *ἀνθρωποπάθειαν*.” The reliability of this unspeakable information is corroborated by an orthodox volume—perhaps the most instructive that has ever been published on the subject—which appeared in Milan in 1608. The

second edition bears the following title: "COMPENDIUM MALEFICARUM, ex quo nefandissima in genus humanum opera venefica, ac ad illa vitanda remedia conspiciuntur. Per Fratrem Franciscum Mariam Guaccium Ord. S. Ambrosii ad Nemus Mediolani compilatum. In hac autem secunda editione ab eodem authore pulcherrimis doctrinis ditatum, exemplis auctum, & remediis locupletatum. His additus est Exorcismus potentissimus ad soluendum omne opus diabolicum; nec non modus curandi febricitantes, ad Dei gloriam, & hominum solatium. MEDIOLANI. Ex Collegii Ambrosiani Typographia. 1626." One of the very numerous woodcut illustrations of this enlightening volume exhibits a lady devotee proceeding to the nocturnal convention astride a flying goat, and another depicts the special feature of the reception and initiation: "*Tum candelis piceis oblatis, vel umbilico infantuli: ad signum homagii eum in podice osculantur.*"

And no seeker for historic truth should be persuaded that the average English opinion of that date was more enlightened regarding witchcraft than was that of Italy. The belief of the Puritan in the literal infallibility of his authorised version of the Bible placed the reality beyond question, and its punishment by death a matter of Christian duty. The practises of those self-taught apostles of reformed doctrine were, of course, copiously satirised by the doggerel poets of the period. One of these refers to a random visit to a very "proper" locality:—

—Where I found a Puritane,
Hanging of his cat on Monday,
For killing of a mouse on Sunday.

Small would be the chances of mercy for the (accused) witch who was unfortunate enough to be tried by a jury made up of such! And while the Puritan movement was at its height, many of them pretty surely were. The Pilgrim Fathers who colonised New England carried with them their modes of thought and canons of practice; of which the supernatural aspects were further developed

by their new experiences of life—in a vast continent, peopled by strangely different specimens of the human form, and inspiring weird thoughts in the vast solitudes of its forests, and by the margins of its immense lakes and rivers. They preserved them with the rigid conservatism of provincial life; and the blossoms which they bore are vividly depicted in Cotton Mather's *Wonders of the Invisible World*, and by the whole recorded history of the blood-and-fire crusade against witchcraft which was so largely due to the zeal of the Mathers, father and son.

For just over a century and a half England was torn with the internal dissensions which resulted from the uncompromising antagonism of the leaders of religious thought; and these latter, it need hardly be said, aimed at political as well as doctrinal influence. They reached a critical extreme on one occasion with the execution of Charles I., and a second time with the expulsion of James II., after which they became less violent. The succession of the stately and bloody tyranny of the Tudors by the more tortuous and feeble methods of their Stuart successors must have told upon life and thought throughout the country. The orphaned son of the imprisoned Queen of Scots grew up unmanly and untidy, and some of his personal habits must have grated upon the feelings and tastes of even the crudest of London courtiers. His political morality was summed up in his oft-quoted motto: "*Qui nescit dissimulare, nescit regnare*"; while his personal "propriety" may be guessed from the record that he never washed any part of his body—not even his fingers, which he wiped upon a dry napkin after eating. The needy Scotch clients who followed him were said to form a continuous line from Edinburgh to London—where, of course, they at once occupied all the available salaried positions. No Caledonian immigrant imported anything but his kilt and his "*youk*." The prominence of the latter in the public eye of the period may be estimated from one of the popular ballads, of which the following are the opening stanzas:—

The Youk is a gentle and lovely Diseese,
 Fit Ladies and Lords and Princes to please,
 For it finds rare diversion for sick idlers as these,
 Whilk nae body can deny.

In Youk's commendation, a Monarch I wot,
 Hath made high Encomiums, and learnedly wrot,
 I think it was James the illustrious Scot,
 Whilk nae body can deny.

For aen—that was scabby, he said was a thing,
 We lang and strang Nails, only fit for a King,
 But for the best Subject too precious a thing,
 Whilk nae body can deny.

This unkempt monarch was devoted to his handsome young (masculine) favourites, whom he embraced in public, with copious osculation and beslaving. Sir Edward Peyton tells us that "one Mr. Beely, a Dane in great secrecie, discovered to me, he was natural father of King Charles." The paternity of the second Charles has been discussed in correspondingly dubious terms. Some may question the relevancy of such facts in this connection; it is that which I specially desire to emphasise. Such conditions and practices among the privileged representatives of almost absolute authority, existing in the presence of the hard and hopeless lives of the struggling poor, not only furnished the Puritan religionists and revolutionists with their most effective weapons, but also afforded the most unanswerable arguments in favour of the existence of an Evil Power, who exercised an almost uncontrolled influence. When the late "Sage of Chelsea" found himself unable to syllogise into silence a trans-Atlantic visitor who was aggressively loud in his expressions of disbelief in a personal devil, he brought him in the evening to the House of Commons, where a tangled debate was carried out at great length, and with peculiar vehemence. The visitors made no running comment; but, as they descended the stairs in silence, Carlyle caught his friend by the elbow and asked in a loud whisper, "D'ye believe in the Devil, noo?" The American is said to have made no reply! The public (and most prominent section of the private) life of England in the days of Sir Thomas

Browne can be safely said to have furnished more demonstrative matter for argument in the same direction.

The mildly saintly John Wesley was Thomas Browne's junior by almost exactly a century. He retained to the end his unlimited belief in witchcraft, and declared that to give up witchcraft was to give up the Bible. The third edition of the "Encyclopædia Britannica" was published in 1797, and the article *Dæmoniacs* informs the reader—in orthodox terms of the period—that: "The reality of demoniacal possession stands upon the same evidence with the gospel system in general." And I do not propose to discuss the treatment which would be meted out to all specimens of fallen humanity who were vigorously accused, or even suspected, of holding friendly communion with any of the agents of the Prince of Darkness, whose activity in matters mundane has so comparatively recently been recognised in enlightened England by leading representatives of Protestant thought, such as Rev. W. Scott and Dean Burgon—were the secular and theological powers as strongly united against the common foe in even the past century as they had been in the preceding ones.

In presence of such facts as I have now placed before the reader in this rather tediously prolonged communication, he will hardly, I think, be able to say that any special pleader, or prosecutor, who has taken the trouble to "make up his brief," can conscientiously accuse Sir Thomas Browne of *cruelty* or the desire to *sacrifice* (human) *lives* in connection with the delivery of his "expert" testimony in a case in which it probably secured the execution of two women accused of witchcraft. His belief in devils and witches had been emphatically announced in his published works many years before the trial in question. Such belief was that of the members and teachers of the orthodox Catholic Church throughout the world, who admitted no doubts regarding the existence and the proper treatment of witches. But the fact which (the more enlightened section at least of) Protestant England is painfully conscious of in the present day is that the leaders of "heretical" Christianity and

their representatives and successors, for at least a couple of centuries, were far more energetically and viciously ruthless in their crusade against witches and witchcraft than the elder Church had been at any period of its history. Browne's views on this head were the reverse of exceptional; the worst that can justly be said of them is that they display a suspicion of narrow conservatism in some directions, as does his contemptuous rejection of the Copernican system of astronomy. The earnest and indefatigable seeker after truth had indicated to his inquiring contemporaries a greater number of the errors of the "learned Vulgar" than did any Englishman of his restless and inquisitive generation. He illustrated for all time the manifold abuses of received "authority" in opinion. That he did not reject its influence in everything is no matter for surprise. The man who has done so—to use a random Hibernicism—remains yet unborn. England has the best reasons to be proud of Thomas Browne, as one of her most earnest and high-minded sons. And we more especially, of his own profession, in other countries, who know something of the man by his works, will earnestly join in spirit, if not in body, in the coming celebration of his tercentenary birthday.

ART. XIV.—*Paratyphoid Fever*.^a By BASIL BROOKE,
B.A., Univ. Dub.

THERE are a number of organisms which are intermediate in their characters to the *B. typhosus* of Eberth (the organism found in typhoid fever) and the *B. coli communis*.

Some of these organisms have the power of producing in man a state which closely resembles typhoid fever. For this condition the names "para-colon" and "paratyphoid" have been suggested, and the latter is the name generally accepted. The name "para-colon" was given to some bacilli of this group by Gilbert in 1895, and in

^a Read before the Dublin University Biological Association, in the Session of 1904-1905.

the following year two French physicians—Achard and Bensaude—recorded cases of fever under the name of “Paratyphoid Affections.” Since then some two hundred cases or so have been recorded from all parts of the world. The disease may occur in epidemics, or it may be spread by contagion, by drinking water, and, in short, by the same means as in typhoid. It is said to occur most frequently in the autumn.

Apparently paratyphoid may simulate typhoid in all details clinically—in its mode of invasion, in its temperature curve, its pulse-rate, in there being an enlarged spleen, and typical rose-spots indistinguishable from the spots in typhoid.

Cases have been recorded in which the same complications which occur in typhoid have occurred in paratyphoid—namely, phlebitis and thrombosis, bronchitis and pneumonia, cholecystitis and cystitis, &c.

Hæmorrhage has also occurred, and in one of the cases to be recorded in this paper the large amount of hæmorrhage from the bowel is the chief feature.

I have not read of any cases in which perforation has occurred. But too much importance must not be attached to this, as it must be borne in mind that it is only comparatively recently that paratyphoid has come to be recognised as a disease separate from typhoid fever, and some of the cases of so-called typhoid, in which perforation has occurred, may possibly have been unrecognised paratyphoid.

It is said that paratyphoid is less severe than typhoid—only a few fatal cases having been recorded—but, again, many fatal cases may have been unrecognised.

In these fatal cases no ulceration of Peyer’s patches was found, and in a case which terminated fatally, and was described by Dr. Craig and Professor White in 1902—though there was no ulceration of Peyer’s patches, acute inflammation of the intestinal mucous membrane was present. Therefore, though there has been no intestinal ulceration in fatal cases recorded up to date, it is hardly correct to argue, from the insufficient evidence at our disposal, that there is none. The occurrence of profuse

hæmorrhage in many cases also tends to show that these lesions are probably, in some cases at any rate, present.

It will be seen that paratyphoid fever is, therefore, clinically quite indistinguishable from typhoid, and it is only by careful bacteriological observations that the diagnosis can be made. These observations are carried out by means of Widal's test, and also by isolating pure cultures of the bacilli from the blood.

Unlike typhoid fever, paratyphoid is not due in every case to the same bacillus, but it can be produced by any one of a number of closely-allied bacilli—members of the group before mentioned—some of which show characters closely resembling the *B. typhosus*, whilst others are closely allied to the *B. coli communis*. These bacilli have received the name of the "Intermediate Group of Gärtner," and this group has been further sub-divided by Professor Hewlett as follows:—

1. *The Enteritidis Group*, containing the *B. enteritidis* of Gärtner, which is the cause of epidemic meat-poisoning in man.

2. *Pneumonic Group*, which produces pneumonic symptoms in man.

3. *Paratyphoid Group*, which causes paratyphoid fever in man, and is further sub-divided into α and β groups:—

The α paratyphoid bacillus more closely resembling the *B. typhosus* than β paratyphoid does. The β bacillus is the bacillus which has been isolated in the fatal cases recorded; and

4. A group non-pathogenic to man.

This classification is apt to lead to confusion. For instance, in the case referred to before as being reported by Dr. Craig and Professor White, Professor White states that he isolated the *B. enteritidis* from the organs. Now, according to Hewlett's classification, it would seem that the paratyphoid group alone is capable of producing the fever. No doubt the organism isolated by Professor White would not have been called the *B. enteritidis*, but would have been placed in the paratyphoid group by Hewlett. Still I think that this classification

tends only to complicate matters instead of simplifying them. When one looks at the lists of bacilli which comprise this intermediate group of Gärtner, many of them differing from one another only in the minutest detail, it will be seen that the attempt (and it will only be an attempt) at classification must of necessity be a very broad one.

As bacilli exist under different conditions, they take on different characters and produce different results in the human body. It is well known that the virulence of organisms can increase or decrease according to the media through which they are passed; in other words, under different conditions they change their characters.

Pasteur's and other observers' experiments on animals have proved this. A special instance may be taken in the anthrax bacilli used in the laboratories for demonstration purposes. As time has gone on, and generation after generation of these bacilli have been produced, their virulence has been greatly lessened; but if successive inoculation of these be made in a series of mice their virulence will be regained. So I think that these bacilli, originating primarily in one distinct species, individual varieties of which they still are, as they have changed their conditions of life, have become changed in their characters also. And so, some of these bacilli, under certain conditions, are capable of producing that state which we now know as paratyphoid fever, whilst others, meeting with other conditions, will produce the symptoms of epidemic meat-poisoning and so on; and, therefore, we may infer that these diseases are all caused by the same race of bacilli existing under different circumstances.

It is popularly supposed that paratyphoid fever is due to Gärtner's bacillus. If we remember that Gärtner's name is applied to this whole group, and, inasmuch as some of the members of this group certainly do cause the fever, this is true; but Gärtner's name was originally given to an organism isolated by him in 1888 from the organs of a patient who died from eating the flesh of an ox, which was killed when suffering from diarrhoea. To

this organism he gave the name of the *B. enteritidis*, and it is on account of the similarity of the paratyphoid organisms to this that Gärtner's name was extended to them also. Ninety-eight people partook of the flesh of this ox, and of these 58 sickened, and one case terminated fatally. The patient in this case seems to have eaten the meat in an uncooked condition. The symptoms in these cases were—fever accompanied by vomiting, diarrhœa, weakness, and pains in the joints. The incubation period varied from 24 to 30 hours. In the milder cases the illness lasted from 3 to 5 days, and in the severe cases it lasted 4 weeks. These attacks did not resemble typhoid fever, and in all of them, and also in other cases of epidemic meat-poisoning which have been recorded, the *B. enteritidis* of Gärtner has been isolated.

I may, perhaps, here make a brief reference to Widal's reaction in cases of typhoid and paratyphoid fevers.

The test depends on the fact that the blood-serum of patients suffering from these fevers can cause the bacilli of the disease to adhere together in clumps instead of moving freely in the culture medium, as they normally do. The test is not infallible, for clumping of the *B. typhosus* has taken place with the serum of people who were quite healthy and had never suffered from typhoid fever in their lives. Still the error is only 5 per cent. (*The Practitioner*, Jan., 1904), and this may be partly accounted for by the suggestion that some of these cases were due to the paratyphoid bacilli.

In some cases in which the paratyphoid bacilli were obtained from the blood, and there was no doubt whatever that the disease was paratyphoid fever, the reaction was positive in a dilution of $\frac{1}{10}$ with the *B. typhosus*.

Cases of double infection with the typhoid and paratyphoid bacilli have occurred, but in the cases mentioned above the *B. typhosus* was not found, so one must not be content if, in doing the test, a positive result is obtained in a low dilution; but dilutions up to $\frac{1}{300}$ should be tried, as the paratyphoid bacilli give positive results in even as high a dilution as this.

If no reaction is obtained during the first two weeks of

the fever the test should be tried in the third and fourth weeks, and even later.

Probably the toxic substances formed by the bacilli, and which cause the clumping phenomena, have not fully formed in these early stages.

I have purposely left the cases of paratyphoid, which I will now read, to the end of my paper, because—though I was interested in the cases at the time—the notes are not my own, and it is only through Dr. Bewley's kindness in letting me have all particulars that I am enabled to record them.

All three patients were admitted to hospital about the same time, and all three were boys from the Church of Ireland Training College. It was not discovered how the infection occurred. There were forty other students at the College at the time—all getting the same food, &c. - and none of these fell ill.

CASE I.—Male, aged twenty, fell ill on Feb. 14th, 1904, suffering from pains in the back and bad headache, felt all over his head. He went to bed at once, and felt unable to get up on the subsequent day. On Feb. 16th, pains in back still continuing, he was seen by Dr. Bewley, who, thinking he was suffering from lumbago, gave him sodium salicylate. On Feb. 18th pain in back ceased, and he complained of pains in the legs. Tongue was furred, and he felt sick. On Feb. 22nd he was removed from the dormitory to the school infirmary. At this time he seemed to be suffering from rheumatic fever. His tongue was coated with a thick white fur. His bowels were confined, but moved with a seidlitz powder. His temperature varied from 102° to 104.3°. On the afternoon of Feb. 26th, on going to the closet, he had a very large hæmorrhage from the bowels. He became very weak and pale. That night, and next morning, a little more blood was passed. Next day (Feb. 27th) he was removed to hospital, the thirteenth day of his disease. From this time on he made a rapid recovery. He never had any rose-spots or an enlarged spleen; abdomen was not distended; there was a trace of albumin in the urine. He was very anæmic at first, but gradually recovered his colour. His temperature became normal on March 26th, the twenty-first day of his illness. His bowels during his stay in hospital were confined.

The chief point to be noticed in this case is the large hæmorrhage which was described by Dr. Bewley as being the largest he ever saw—the pan in the closet being filled with dark, jelly-like clots.

CASE II.—J. C., male, aged twenty, fell ill on Feb. 16th, or two days after Case I. He suffered from headache, pains in the back, and confined bowels. He did not go to bed till the 19th, but then felt unable to get up. He was removed to hospital on Feb. 27th. He then showed a tongue covered with a dirty white fur; abdomen was not distended, but the spleen was enlarged and easily felt. Numerous rose-spots were to be seen, slightly elevated and disappearing on pressure. Bowels were confined and were moved by enemas. Urine contained a trace of albumin. His temperature while in hospital did not exceed 102.2, and soon fell to normal, not rising after the twenty-third day of his illness. Recovery was satisfactory and without complications.

CASE III.—S. J., male, first fell ill two weeks after the other two patients on Feb. 29th. The onset was gradual. He remained up for a week, suffering from nausea and headache; his nose bled. Bowels fairly free. He was admitted to hospital on March 7th, the eighth day of his illness. His tongue was white in the centre, clean at tip and edges. Abdomen was somewhat full. Spleen enlarged and easily felt. Rose-spots were present. The urine contained a trace of albumin. His temperature after the date of admission into hospital never exceeded 100.6°, and fell to normal on the eighteenth day. His bowels were constipated while he was in hospital.

It will be seen that Cases II. and III. resembled typhoid fever closely, while Case I. had a bad hæmorrhage, but no spots and no enlarged spleen.

Case I. seems to have resembled acute rheumatism. In no case was there diarrhœa. In all three cases recovery was satisfactory.

The serum from the blood removed in all three cases gave a negative reaction with a favourable strain of *B. typhosus*, even with a low dilution of $\frac{1}{10}$. But when the test was tried with a culture of an organism which had been isolated from a case of continued fever detailed by

Dr. Craig and Professor White in 1902, the clumping was quite distinct with a dilution of $\frac{1}{20}$. A culture of this same bacillus was also grown from some of the urine in one of the above cases, which was removed in a sterile vessel.

In conclusion, I would sum up as follows:—Paratyphoid fever is—so far as we know at present—clinically quite indistinguishable from typhoid, and in it the same intestinal lesions may be present. The cause of the fever is a group of bacilli, which are members of the Gärtner group, and are called paratyphoid bacilli; and lastly, in our present state of uncertainty, the treatment and diet should be as rigid as in true typhoid fever.

HYDATID EMBOLISM OF THE PULMONARY ARTERY.

In the *Journal of the American Medical Association*, September 9, 1905, we find the following abstract of a paper by M. Garnier and J. Jomier, which appeared in a recent number of *La Presse Médicale*, Paris. The syndrome induced by embolism of the pulmonary artery by a hydatid may be that of ordinary embolism of the lungs, or it may be modified by the character of the embolus. The special syndrome is characterised by sudden onset accompanied by symptoms suggesting ordinary pulmonary embolism, but with the intense, persisting dyspnœa unaccompanied by distinct stethoscopic signs. Hæmoptysis and symptoms of asystole also develop, terminating fatally in time. In some cases an ascending infection hastens the accidents, and death ensues in a syndrome, suggesting pneumonia. A history of hydatid cysts elsewhere facilitates the diagnosis. The hydatid vesicle does not completely obstruct the vessel, nor does it entail secondary thrombosis, but the disturbance in the circulation proves fatal sooner or later. In the 12 cases on record, the affection had a protracted course in 4. The patient in the case described was a printer, of forty-two years, previously apparently healthy, who succumbed in a few days with dyspnœa, cyanosis, and other symptoms suggesting pneumonia.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Practical Manual of Diseases of Women and Uterine Therapeutics for Students and Practitioners. By H. MACNAUGHTON JONES, M.D., &c. Ninth Edition. University Series. London: Baillière, Tindall & Cox. 1904. Pp. 1021.

DOCTOR H. MACNAUGHTON JONES' popular manual of Diseases of Women has reached its ninth edition and well nigh its majority, for it was first published in 1884. A comparison of the various editions with each other illustrates how well this work has fulfilled the object with which it was originally published—namely, to give a reliable digest of practice, and, at the same time, to embrace those pathological researches on which a sure foundation of clinical treatment is based. So great have been the advances in both these directions, however, since the last edition was published that the author has found it necessary practically to re-write the entire work, and in so doing he has received valuable assistance from Dr. Edge, of Wolverhampton, to whom we are indebted for the article on extra-uterine pregnancy; Dr. Murphy, of Chicago, Dr. Comyns Berkeley, Dr. Charles Ryall, and others. Nevertheless, the work remains essentially the product of Dr. Macnaughton Jones' matured experience, and bears upon almost every page the impress of his forceful personality. This is especially evident where he deals with matters which are still undecided, for though he generally states the views of others with fairness, he never leaves the reader in doubt as to what he himself believes to be right. In illustration we will cite a few examples. In describing the replacement of a retroverted uterus he says—"In all efforts to effect re-

position, it is best to place the patient in the semi-prone position. If there be still difficulty the woman should be put in the knee-pectoral position. The best repositor is the finger, and, if it fail, the uterine sound." Schultze's method of bimanual reposition in the dorsal position, and Küstner's by drawing down the uterus with bullet forceps, are not even mentioned, although the majority of gynæcologists, we are persuaded, would consider them preferable to those recommended by the author. We find ourselves more in accord with his remarks upon the treatment of septic endometritis when he says that "in all cases, puerperal and otherwise, the practice of the gynæcology of to-day is to discountenance the old methods of inaction and to encourage the plan of timely local treatment of the source of infection in the endometrium by curettage," although we should like to add the rule laid down by Säger, that in puerperal cases the curette should always be guided and controlled by the finger. As a good example of the fair-minded manner in which the views of others from which he differs are set forward we may turn to the treatment of the endometrium by steam, for although it is placed in the forefront of the methods of dealing with that structure, and is very fully dealt with in eight closely-printed pages, yet it is evident that he is by no means a warm advocate, and that he considers it inferior to the use of the curette followed by chromic acid. And he adds that even from the description of the method and precautions insisted upon by Pincus himself, it appears obvious that this operation is not one to be lightly undertaken, but that in certain conditions which he mentions, where curettage has failed, it may effect a cure and save the uterus from ablation. As a last example we would cite the much-disputed point of operative interference in cases of myoma; and here we certainly agree with his view, that what must be insisted upon is that the mere presence of a fibromyoma does not justify an operation, but that the old idea of waiting for the menopause to give the tumour a chance of disappearance has long been exploded.

A detailed review of so well-known a work as this, which has reached its ninth edition, is quite unnecessary. The operative portion is dealt with in a manner which leaves little to be desired, and the efforts of the author towards the attainment of complete asepsis are commendable in the extreme, though we are surprised that in this direction the use of rubber gloves is entirely ignored. The medical side of treatment also receives much more careful attention than is usual in works upon gynaecology. The manner in which the book has been brought out by the publishers and the profusion of valuable wood-cuts and coloured plates, most of which are new and original, will help to ensure for this edition an even more cordial reception than that accorded to its predecessors.

A Manual of Midwifery for Students and Practitioners.

By HENRY JELLETT, B.A., M.D.; F.R.C.P.I.; L.M. With the assistance in Special Subjects, &c., of W. R. DAWSON, M.D., F.R.C.P.I.; H. C. DEBURY, M.D., F.R.C.P.I.; T. G. MOORHEAD, M.D.; R. J. ROWLETTE, M.D. "University Series." With 469 plain and coloured Illustrations and 9 Plates. London: Baillière, Tindall & Cox. 1905. Demy 8vo. Pp. xxv + 1158.

ALTHOUGH the number of text-books on obstetrics has increased so rapidly that one is often at a loss to know which particular book to recommend to the student or the busy practitioner, yet we welcome the volume which is here reviewed, as it epitomises and crystallises the teaching which has made Dublin such a well-recognised centre of the obstetric art.

The author has succeeded in compressing into one volume of handy size nearly 1,200 pages. The letterpress is good. The Table of Contents, List of Illustrations, and Index are very full and complete. A great many new illustrations are introduced, and fresh material from the museums of the School of Physic, Trinity College, the Royal College of Surgeons, and the Rotunda Hospital has now been utilised for the first time. The subdivision of pregnancy, labour, and the puerperium

under the heading of what is physiological and what is pathological is a decided advantage.

Doctor Jellett has not been dogmatic in the principles he lays down, but quotes freely from the works of those authorities who are best known and whose opinions carry most weight.

The illustrations, although for the most part extremely graphic, yet in some instances show a want of style and finish which we hope to see remedied in future editions—*e.g.*, the illustrations on pages 400, 403, 405, 408, 425, 427, 429, and 431, and some others of the same type. While the illustrations on pages 920 and 924 and that facing page 666 are most excellent productions, the illustration of Steele's Modification of Barnes' Dilator might profitably take the place of the illustration of Barnes' Dilator on page 961. The volume has been brought thoroughly up to date. The price is moderate, and so it is brought within the reach of all those who require a reliable, scientific textbook for ready reference.

A Short Practice of Midwifery for Nurses, embodying the Treatment adopted in the Rotunda Hospital, Dublin.

By HENRY JELLETT, M.D. Second Edition. London: J. & A. Churchill. 1905. Pp. 407.

THE second edition of this excellent little handbook has been revised in many particulars, and is a clear and accurate exposition of the art of midwifery. It tells everything a nurse requires to know, whether working on her own account or under a medical man, and clearly shows the indications which, in the former case, should lead to medical assistance being sought. If anything, it teaches and expects rather too much. For instance, in dealing with complications which need medical assistance, it might be better to point out the directions in which the medical man will act, but to leave the details of action to him. Again, it is hardly wise to recommend the use of a gum-elastic catheter for removing mucus from the child's larynx; fortunately the nurse would probably introduce it into the œsophagus, and do no harm. The

only misprint we noticed is that on page 143. This catheter is a "No. 3," whilst on page 384, in the "Contents of a Midwife's Bag," it has grown to a "No. 8."

The Diagnosis and Treatment of Some of the Common Diseases of the Rectum and Anus. By CECIL H. LEAF, M.A., M.B. (Cantab.); F.R.C.S. (Eng.); Surgeon to the Cancer Hospital and the Gordon Hospital for Rectal Diseases. London: E. H. Blakeley. 1905. Pp. 118.

THE work is intended primarily to be an introduction to the study of some of the excellent text-books on rectal diseases already in use. So far as it goes the teaching is sound enough, but it does not seem to us to contain any more information than is to be found in any good, general surgical text-book. What useful object, therefore, is to be gained by its production we fail to see.

Diseases of the Anus and Rectum. By D. H. GOODSALL, F.R.C.S. (Eng.), Senior Surgeon to the Metropolitan Hospital, late Senior Surgeon to St. Mark's Hospital for Fistula and other Diseases of the Rectum; and W. ERNEST MILES, F.R.C.S. (Eng.), Surgeon to the Gordon Hospital for Diseases of the Rectum, Surgeon to the Cancer Hospital, Brompton, late Senior Assistant Demonstrator of Anatomy at St. Bartholomew's Hospital Medical School, and House Surgeon to St. Mark's Hospital for Fistula and other Diseases of the Rectum, &c. Part II. London, New York, and Bombay: Longmans, Green & Co. 1905. Pp. 271. 44 Illustrations.

THE second volume of this book deals with prolapse, invagination, ulceration, stricture, malignant growths, benign tumours, foreign bodies, pruritus ani, and syphilis. Several pages are devoted to "Infective Ulceration of the Rectum," a condition the authors frequently observed at St Mark's Hospital prior to the ward buildings being altered and enlarged. Cases of this form of ulceration were met with both in patients who had been operated

upon there for rectal disease and also in those who had undergone similar operations in some of the general hospitals in London, the provinces, and abroad. A full description of this terrible form of ulceration is given, together with several pathological reports bearing on the ætiology of the disease. While the cause of the ulceration is undoubtedly microbic, the investigations have not led to the discovery of any specific bacillus other than the *Bacillus coli communis*, so that it is possible that this organism may, under altered conditions of soil, be capable of producing the disease in question. We are sure the full way this disease has been gone into will render the book of great interest to any surgeon who has had the misfortune to observe this condition following operative measures.

In considering the after-treatment of cases of excision of the rectum, the authors recommend the administration of opium in small doses at short intervals, "on account of its action in causing the fæces to become liquid at the end of nine or ten days. When opium is thus used there is no need to relieve the bowels by either aperients or enemata, and consequently the danger of too great a strain being thrown upon the recently united bowel is done away with." This sounds an ideal method of dealing with a difficult question in after-treatment, for a hard motion will break down the union gained by keeping the bowels at rest for some days. Unless, however, we could be quite certain that opium will act in this way with all patients we cannot help thinking this method of treatment somewhat risky as a routine treatment.

In dealing with malignant disease of the rectum the authors go fully into the difficulty of making a diagnosis from the symptoms in the early stages of the disease, and the importance of making a digital examination in all cases "in which diarrhœa supervenes upon an attack of constipation, and persists in an otherwise healthy patient, more especially if he has reached the fifth or later decades of life." This is good advice which, if adopted by every practitioner, would certainly lessen the number of inoperable cases of carcinoma of the rectum.

It seems a pity that in bringing out this work the authors did not take more trouble with the illustrations. There are only 44 illustrations in this volume, all from photographs, and, with the exception of some excellent micro-photographs, several are poor in quality and of little value.

Carcinoma of the Rectum: Its Diagnosis and Treatment.

By SWINFORD EDWARDS, F.R.C.S.; Senior Surgeon to St. Mark's Hospital for Diseases of the Rectum and St. Peter's Hospital for Urinary Diseases; Surgeon to the West London Hospital, &c. Demy 8vo. London: Baillière, Tindall & Cox. 1905. Pp. 47.

THIS little book gives the author's experience of rectal carcinoma, with the results obtained by operation for the removal of the growths by the sacral route, based upon forty consecutive cases. The description of the operation seems to us too vague to be of use to anyone not thoroughly familiar with such procedures. But the size of the book necessarily renders a full description impossible. However, there is one serious omission which we cannot help alluding to. In speaking of excision through a laparotomy wound, and, again, in doing a preliminary colotomy where considerable obstruction is present, the author, after opening the peritoneal cavity, says—"My next procedure is to explore the pelvic cavity to ascertain the exact position of the upper limit of the growth and to search for any lymphatic extension along the lateral pelvic walls." No mention is made of palpating the liver for secondary deposits, which seems to us far more important than the examination of the local trouble, for if the liver is affected there is no question of removing the primary focus. This, to us, is the great advantage of opening the abdomen before excision of the rectum.

The chief value of the book lies in the statistics of forty cases operated on by one surgeon. The mortality is 7.5 per cent.; recurrences are found in fourteen cases, in one after eight years, which the author is inclined to look upon as a coincidence rather than a true recurrence. It

seems a pity that more details of the cases are not given. We are not told in how many cases the bowel was brought down to the anus, or how many had control, but in two cases there was a "normal anus," another "uses normal anus." These are points of considerable importance in statistics of excision of the rectum.

Clinical Diagnosis: The Bacteriological, Chemical, and Microscopical Evidences of Disease. By RUDOLF V. JAKSCH, M.D.; Professor of Special Pathology and Therapeutics; Director of the Medical Clinic in the German University of Prague; Ordinary Member of the Supreme Sanitary Council. Fifth English Edition. Edited by ARCHIBALD E. GARROD, M.A., M.D., F.R.C.P.; Assistant Physician to, and Lecturer on Chemical Pathology at, St. Bartholomew's Hospital; Physician to the Hospital for Sick Children, Great Ormond Street. London: Charles Griffin & Co., Ltd. 1905. 8vo. Pp. xxvi + 602.

WE have written in terms of such warm approbation of the earlier editions of Professor von Jaksch's "*Clinical Diagnosis*" that little more is necessary than to draw attention to some novel features in the present issue of a classical work.

In the first place, this—the fifth English edition—is based upon the fifth German edition, but it contains additional matter and illustrations. Amongst the latter may be mentioned figures of eosinophil cells in sputum from a case of bronchial asthma stained by Aldehoff's method (Fig. 64, page 140), of ribbon-like casts or cylindroids, not hitherto described but observed by the author in cases of very acute disturbances of the circulation in the kidneys, such as result from the occlusion of the renal artery by an embolus (Fig. 122, page 305), and of trypanosomata from human blood (Fig. 37, page 79). The last-named plate is printed from the original stones by permission of the Royal Society. It was lithographed from drawings by Colonel Bruce, F.R.S., and Dr. Nabarro,

and appeared in the Reports of the Sleeping Sickness Commission of the Royal Society, No. IV. This will show how thoroughly up-to-date the fifth edition is.

The manner in which the work has been brought out reflects great credit on everyone concerned in its publication. We are not a little perplexed and amused at an "errata" slip pasted in at the beginning of the book. The only "erratum" given is surely itself an erratum—"for Hæmocytometer read Hæmacytometer." We could understand the correction "Hæmatocytometer" for "Hæmocytometer" as being in accordance with Greek derivation, but "Hæmacytometer" is certainly wrong.

In his preface the author expresses his deep regret at the premature death of Dr. James Cagney, which deprived the work of the help of its original skilful translator. At the same time Professor von Jaksch in graceful terms thanks his present English editor, Dr. Archibald E. Garrod, "who has revised the translation throughout, and has enriched the book with many valuable additions out of the wealth of his own knowledge."

Manual of Operative Surgery. By JOHN FAIRBAIRN BINNIE, A.M., C.M. (Aberdeen); Professor of Surgery, Kansas City Medical College, Kansas City, Mo.; Fellow of the American Surgical Association; Membre de la Société Internationale de Chirurgie. With 559 Illustrations, a number of which are printed in colours. Philadelphia: P. Blakiston's Son & Co. 1905. Pp. 644. London: H. K. Lewis.

HAVING perused the volume before us, we have nothing but praise to offer the author for his work so far as it extends, but it is to be regretted he did not, even at the cost of enlargement and extra expense, extend the scope of the work so as to embrace the operative surgery of the extremities so far as the joints, bones, and blood-vessels are concerned. Naturally, abdominal surgery occupies a very large portion of the book, and the subject is thoroughly dealt with and well illustrated. All impor-

tant operative procedures are briefly yet clearly described and illustrated, as well as their numerous modifications, while the author frequently adds a few practical remarks of a critical nature on the procedures under notice. The book is one we can recommend as eminently sound.

Lectures on Clinical Surgery. By H. C. HINDER, M.B., M.Ch.; Honorary Surgeon, Royal Prince Alfred Hospital; Joint Lecturer on Clinical Surgery, University of Sydney. With 50 Illustrations. London: Baillière, Tindall & Cox. 1905. Pp. 286.

THIS volume of lectures, with the exception of one on appendicitis, is devoted to genito-urinary conditions. The lectures on the diagnosis of genito-urinary cases and the cystoscope are eminently practical. As one would expect at present, a good deal of attention has been given to, and much space taken up with, the surgery of hypertrophied prostate. We were not a little surprised to find the following statement:—"Bottini's operation seems to be particularly adapted to early cases. The risk is slight, the recovery rapid, and the pain which follows is wonderfully little. If recurrence should take place the operation may be repeated." The following statement is worth reproducing, and we thoroughly endorse it:—"Men are apt to treat too lightly the introduction of their patient to a catheter life." The author points to cases in which catheterism in a perfectly clean bladder has been followed by death within two or three days, or as many weeks; yet such clean cases do admirably after operative treatment and free drainage. One other statement is worth recording as an evidence of the practical common sense of the author:—"Whether the prostate is completely removed or not matters little. It is plain that all the prostate that could be left might be represented by a piece of brown paper. At all events it would not be likely to interfere with the restoration of normal micturition." The chapter on "Suppression of Urine" from calculus is one of the most important, in our opinion, in the book.

The book is pleasant reading, and is certainly worthy of perusal. The author is evidently a good, sound, practical surgeon.

The Conjunctiva in Health and Disease; being a Record of Some Research Work. By N. BISHOP HARMAN, F.R.C.S. London: Baillière, Tindall & Cox. 1905. Demy 8vo. Pp. xvi + 276. With 43 Illustrations.

THE author, in his preface, says that he has endeavoured to set forth three sets of observations on the condition of the conjunctiva in health, and in various forms of inflammation, including complete bacteriological examinations in 400 subjects.

The state of the conjunctiva is treated of:—

I. In *health*, as determined by a systematic examination of children in elementary schools in one great district in London, in laboratory work, both as regards the anatomy of the region, and in bacteriological examinations of the fornices and lid margins.

II. In *disease*, as found both clinically and pathologically, with investigations into the treatment of the disease.

III. In a *sociological inquiry*, wherein the incidence of disease, as affected by age, by the season of the year, and by the social status of the subject, is examined.

As a result of this latter inquiry he arrives at the following interesting conclusions:—

The incidence of inflammatory diseases of the conjunctiva is found to be greater—

I. In infancy than in youth, in youth than in age.

II. In the female sex than in the male sex, with the exception of the mobile years of young adults, when the incidence is greater in males than in females, a liability synchronous with a marked incidence of injuries in the males.

III. In the warm, dry, sunny months of the second quarter of the year—April, May, and June—than at any other season of the year.

IV. In the poor, the dirty, and the overcrowded than

in those whose conditions of life are relatively comfortable, clean, and open.

This most valuable contribution to ophthalmic literature is written in a most interesting style, in pure English. The sentences are well turned and the meaning is always clear.

The author is obviously master of his subject, and each chapter is full of original observations and experiments conducted by himself and practical conclusions drawn therefrom.

The volume is well worth reading with care.

Diseases of the Ear; for Practitioners and Students of Medicine. By JAMES KERR LOVE, M.D. With 54 Stereoscopic Photographs, two Coloured Plates, and many Illustrations. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1905. Pp. 339.

WE regret the delay in offering our congratulations to Dr. Love for having produced so admirable and attractive a work on the Ear as the one before us. The reason of the delay was the pleasure which we took in reading the text and admiring the stereoscopic photographs with which it abounds, and which give it a value peculiarly its own.

The volume consists of nine chapters, each treating of a separate branch of the subject. All are clearly and concisely written, but the chapters on "Diseases of the Middle Ear," "Complications of Middle Ear Suppuration," and "The Intra-Cranial Complications of Suppurative Middle Ear Disease" are peculiarly instructive, especially when read in conjunction with the beautiful stereoscopic illustrations which so aid in the accurate understanding of the pathological changes occurring within the bony portions of the organs of hearing.

Perhaps the most original portion of this excellent volume is contained in the chapter on "Deaf Mutism," in which the author shows, in diagrammatic form, the results of the testing of deaf mutes (both acquired and

congenital) by the continuous tone series, and has mapped out, in graphic form, the "islands of hearing" found in a large majority of deaf mutes.

The book is beautifully got up, is printed in large, clear type, and is abundantly illustrated. Each volume is accompanied by a handy flat stereoscope, suitable and necessary for examining the stereograms which form so important an item in this valuable addition to the text-books on aural surgery.

The shape of the page (almost square) is unusual, and the length of the lines appears awkward at first, but the type is so large, and the printing and paper are so excellent, that no real difficulty is experienced. We can most highly recommend this text-book to the attention of all whom it may concern.

Æquanimitas. With other Addresses to Medical Students, Nurses, and Practitioners of Medicine. By WILLIAM OSLER, M.D., F.R.S.; Professor of Medicine, Johns Hopkins University, Baltimore. London: H. K. Lewis. 1904. 8vo. Pp. 389.

As our readers are well aware, Dr. Osler is no longer as he is described on the title-page of this volume. Called by His Majesty King Edward VII. to the high office of Regius Professor of Medicine in the University of Oxford, he has left the modern but already famous Johns Hopkins University for the ancient seat of learning on the banks of the classic Isis—Baltimore's loss is Oxford's gain.

The book takes its title from the superscription of the first address enshrined in its pages—*Æquanimitas*—a valedictory address to the University of Pennsylvania, delivered on May 1, 1889, when Dr. Osler was passing to his great work in the Johns Hopkins University and Hospital. Prefixed to the address we have an apt definition of "æquanimitas" in the words of the Emperor Marcus Aurelius Antoninus:—"Thou must be like a promontory of the sea, against which, though the waves

beat continually, yet it both itself stands, and about it are these swelling waves stilled and quieted."

There are eighteen addresses in the volume—all interesting, all instructive, all pitched in a high moral and intellectual key. In the eleventh address, "After Twenty-Five Years," delivered at M'Gill College, Montreal, in 1899, we learn something of the inner working of the mind of a newly-elected professor, for Osler tells us of his sensations when as a young and untried man in 1874 he faced "the awful task of the preparation of about one hundred lectures" on the Institutes of Medicine. He "reached January in an exhausted condition, but relief was at hand. One day the post brought a brand-new work on physiology by a well-known German professor, and it was remarkable with what rapidity my labours of the last half of the session were lightened. An extraordinary improvement in the lectures was noticed; the students benefited, and I gained rapidly in the facility with which I could translate from the German."

This same Address is in a measure an autobiography, as the first section narrates his experiences at Montreal, where the earlier years of his professional career were spent.

A very valuable portion of the volume is the Addresses to the Nurses of the Johns Hopkins Hospital in 1891 and 1897 on the all-important topics, "Doctor and Nurse" and "Nurse and Patient." The key-note of these useful prelections is contained in quotations from Sir Thomas Browne and from the thirty-ninth Psalm. The former runs thus:—"Think not Silence the wisdom of Fools, but, if rightly timed, the honour of wise Men, who have not the Infirmary, but the Virtue of Taciturnity, and speak not out of the abundance, but the well-weighed thoughts of their Hearts. Such Silence may be Eloquence, and speak thy worth above the power of Words." The biblical quotation is this:—"I said, I will take heed to my ways, that I offend not in my tongue. I will keep my mouth as it were with a bridle."

"There is no higher mission in this life than nursing

God's poor," writes Dr. Osler in "Nurse and Patient." "In so doing a woman may not reach the ideals of her soul; she may fall far short of the ideals of her head, but she will go far to satiate those longings of the heart from which no woman can escape. Romola, the student, helping her blind father, and full of the pride of learning, we admire; Romola, the devotee, carrying in her withered heart woman's heaviest disappointment, we pity; Romola, the nurse, doing noble deeds amid the pestilence, rescuing these who are ready to perish, we love." (Page 165.)

Other notable addresses in this charming collection are "British Medicine in Greater Britain," delivered before the British Medical Association at Montreal in 1897; "Medicine in the Nineteenth Century" (1901), and "The Master Word in Medicine," a prelection to the undergraduates of the University of Toronto at the opening of the Winter Session of 1903. The master word is *Work*, "a little one, but fraught with momentous sequences if you can but write it on the tablets of your hearts, and bind it upon your foreheads." "Students of Medicine: May this day be to each of you as it was to me when I entered this school thirty-five years ago, the beginning of a happy life in a happy calling." In these words of greeting we have the secret of Osler's successful and splendid career.

The book is a classic, and would be a singularly fitting gift to a young man entering upon his medical studies.

The Edinburgh Medical Journal. Edited by G. A. GIBSON, M.D., F.R.C.P. Ed.; ALEXIS THOMSON, M.D., F.R.C.S. Ed.; and HARVEY LITTLEJOHN, M.B., F.R.C.S. Ed. New Series. Vol. XVII. Edinburgh and London: Young J. Pentland. 1905. 8vo. Pp. vi + 616.

THE seventeenth volume of the new series of our Edinburgh contemporary and namesake may be described as historic, for it opens with a Centenary Number. Under the editorship of the younger Andrew Duncan the first

number of *The Edinburgh Medical and Surgical Journal* appeared as a quarterly magazine in January, 1805. The advertisement sets forth the intention of the founders, and is characterised by tolerant views and catholic aims.

The Centenary Number—that for January, 1905—is worthy of a notable occasion. It opens with a historical introduction by the editors, which is illustrated by thirteen plates of portraits of the former editors and the first publisher, Mr. Archibald Constable. The editors acknowledge their indebtedness to the Mr. Archibald Constable of the present day, grandson of the first publisher, for granting them permission to make a reproduction of Sir Henry Raeburn's picture of his grandfather. The painting seems to be a work of art. The other portraits are those, in order, of Andrew Duncan, junior; Sir Robert Christison, William Seller, Sir John Rose Cormack (from a photograph by Walery of Paris, given by Sir John's son, Dr. Charles Cormack of Vichy), George Edward Day, Alexander Fleming, Sir William Tennant Gairdner, John Hughes Bennett, Sir Henry Duncan Littlejohn, Daniel Rutherford Haldane, George William Balfour, and Joseph Bell—the last the original of "Sherlock Holmes." Only one of the past editors is absent from this portrait-gallery, David Craigie (b. 1793, d. 1866), who was one of the physicians to the Royal Infirmary. The editors express their regret that it was unfortunately not in their power to secure Dr. Craigie's portrait.

But even more important than the Biographical Introduction, with its portraits, is the series of Retrospects by which it is followed, and in which the history of a hundred years of Medicine and Medical Progress is contained. We must content ourselves with giving the subjects and naming the authors of these Retrospects. They are in sequence—Medicine, by Dr. J. S. Fowler; Surgery, by Dr. Alexander Miles; Obstetrics, by Sir Halliday Croom; Gynæcology, by F. W. N. Haultain; Therapeutics, by Dr. Ralph Stockman; Medical Jurisprudence, by Mr. Harvey Littlejohn; Public Health, by Dr. J. Buchanan Young, D.Sc.; Diseases of Children, by Dr. G. H. Melville Dunlop; Diseases of the Eye, by Mr. G. A.

Berry; Otolology, Laryngology, and Rhinology, by Dr. P. M'Bride; Dermatology, by Dr. W. Allan Jamieson; Insanity, by Dr. John MacPherson; Pathology, by Mr. R. F. C. Leith; Physiology, by Dr. T. H. Milroy; and Anatomy, by Dr. Richard J. A. Berry.

The remainder of this volume of our venerable Scottish contemporary is up to the usual high standard of the *Edinburgh Medical Journal*, which has evidently entered upon its second century with all the vigour and enthusiasm of perennial youth.

Beri-Beri: Its Symptoms and Symptomatic Treatment.

An Essay printed by the Board of Trinity College, Dublin, for the author, P. N. GERRARD, M.D., Dub.; District Surgeon Federated Malay States Civil Service. London: J. & A. Churchill. 1904. Pp. 95.

DR. GERRARD, in the course of his duties in the Malay States, has had exceptional opportunities of studying beri-beri, having personally observed about 5,000 cases of that disease. Consequently there is a good deal of value to be attached to his essay as representing the matured judgments of a skilled observer. He gives a very full account of the symptoms. He finds that cases recover most rapidly without treatment other than that given for the relief of special symptoms. Mercury and strychnin, both of which have been recommended, he finds to be actively prejudicial. He believes the affection is due to a microbe, but, though he was able to cultivate certain cocci from the blood of patients suffering from acute beri-beri, later investigations have led him to doubt that this microbe is the actual cause of the disease.

It is a great pity that Dr. Gerrard, who really had something interesting and important to write about, did not succeed in leaving out a great deal of quite unnecessary matter—for example, almost the whole of page 2 is occupied with the description of the mode of obtaining the knee-jerk. The prolix style and confused arrangement of contents have injured this essay.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

MEDICAL EDUCATION AND EXAMINATIONS IN IRELAND.

1905-1906.

MEDICAL students in Ireland, as elsewhere, have in the first instance to choose between University Degrees and Non-University Qualifications or Diplomas. Should they elect to try for a University Degree, their choice must lie between the University of Dublin, which requires a Degree in Arts before registrable Degrees in Medicine, Surgery, and Midwifery are conferred, and the Royal University of Ireland, which—while not requiring a full Arts Degree—yet rightly insists on a liberal education in Arts, tested by more than one searching examination in the same, before a candidate graduates in the three branches of medicine already mentioned—Medicine, Surgery, and Midwifery. Under the “New Regulations” of the School of Physic in Ireland (*vide infra*, page 296), considerable Professional Privileges are afforded to medical students in regard to the Arts Curriculum of the University of Dublin.

Outside the Universities, the chief Licensing Bodies are the Royal Colleges of Physicians and Surgeons. The Conjoint Examination Scheme between the Royal College of Surgeons in Ireland and the Apothecaries' Hall of Dublin has ceased to exist. The position of the latter body as a Licensing Corporation under the Medical Act of 1886 has been defined by the appointment of Examiners in Surgery by the General Medical Council at the bidding of His Majesty's Privy Council.

The Royal Colleges of Physicians and Surgeons are in a position to give a first-class working qualification in Medicine, Surgery, and Midwifery—a qualification which is registrable

under the Medical Acts, which is universally recognised as one of high merit, and the possession of which is attended by no disabilities, such as preventing its possessor from dispensing medicines or keeping open shop for the sale of medicines, if he is legally qualified to do so.

The Medical Schools in Ireland are—(1.) The School of Physic in Ireland, Trinity College, Dublin; (2.) The Schools of Surgery of the Royal College of Surgeons in Ireland (including the Carmichael College of Medicine and the Ledwich School of Medicine); (3.) The Catholic University Medical School, Cecilia-street, Dublin; (4.) The School of Medicine, Queen's College, Belfast; (5.) The School of Medicine, Queen's College, Cork; and (6.) The School of Medicine, Queen's College, Galway.

Facilities for Clinical Instruction in fully-equipped Medico-Chirurgical Hospitals exist in Dublin, Belfast, Cork, and Galway; but, as a rule, the Schools of Medicine in Ireland are not attached to a given hospital, or *vice versâ*, as is the case in London and other large centres of medical education. The student will, however, have little difficulty in selecting a hospital, in the wards of which he will receive excellent bedside teaching and have ample opportunity of making himself familiar with the aspect and treatment of disease.

The detailed information which follows is authentic, being taken directly from the published calendars of the respective licensing bodies.

REGULATIONS PRESCRIBED BY THE GENERAL MEDICAL COUNCIL.

With regard to the course of Study and Examinations which persons desirous of qualifying for the Medical Profession shall go through in order that they may become possessed of the requisite knowledge and skill for the efficient practice of the Profession, the General Medical Council have resolved that the following conditions ought to be enforced without exception on *all* who commence their Medical Studies at any time after Jan. 1, 1892:—

(a.) The period of Professional Studies, between the date of registration as a medical student and the date of Final Examination for any Diploma which entitles its bearer to be registered under the *Medical Acts*, must be a period of *bonâ fide* study

during not less than five years. For the purpose of this requirement the close of the fifth year may be reckoned as occurring at the expiration of fifty-seven months from the date of registration.

(b.) In every course of Professional study and Examinations, the following subjects must be contained:—

- (I.) Physics, including the Elementary Mechanics of Solids and Fluids, and the Rudiments of Heat, Light, and Electricity.
- (II.) Chemistry, including the principles of the Science, and the details which bear on the study of Medicine.
- (III.) Elementary Biology.
- (IV.) Anatomy.
- (V.) Physiology.
- (VI.) Materia Medica and Pharmacy.
- (VII.) Pathology.
- (VIII.) Therapeutics.
- (IX.) Medicine, including Medical Anatomy and Clinical Medicine.
- (X.) Surgery, including Surgical Anatomy and Clinical Surgery.
- (XI.) Midwifery, including Diseases peculiar to Women and to New-born Children.
- (XII.) Theory and Practice of Vaccination.
- (XIII.) Forensic Medicine.
- (XIV.) Hygiene.
- (XV.) Mental Disease.

The first four of the five years of Medical Study must be passed at a School or Schools of Medicine recognised by any of the Licensing Bodies, provided that the First Year may be passed at a University, or Teaching Institution, recognised by any of the Licensing Bodies and approved by the Council, where the subjects of Physics, Chemistry, and Biology are taught.

A student who has, previous to registration, attended a course or courses of study in one or all of the subjects, Physics, Chemistry, or Biology, in any University, School of Medicine, or Teaching Institution recognised by any of the Licensing Bodies, may without further attendance be admitted to examination in these subjects: provided always that such course or courses shall not be held to constitute any part of the five years' course of professional study.

A graduate in Arts or Science of any University recognised by the General Medical Council, who has spent a year in the study of Physics, Chemistry and Biology, and has passed an examination in these subjects for the degrees in question, is held to have completed the first of the five years of medical study, provided that he has registered as a medical student with the General Medical Council.

The Examinations in the Elements of Physics, Chemistry, and Biology should be passed before the beginning of the Second Winter Session.

The General Medical Council recommends the Licensing Bodies to require that the fifth year should be devoted to clinical work at one or more public hospitals or dispensaries, British or foreign, recognised by any of the medical authorities mentioned in Schedule (A) of the Medical Act (1858), provided that of this year six months may be passed as a pupil to a registered practitioner possessing such opportunities of imparting medical knowledge as shall be satisfactory to the medical authorities, and that no qualification in medicine ought to be granted without evidence of Clinical Instruction in Infectious Diseases.

I.

UNIVERSITY OF DUBLIN.

DEGREES AND DIPLOMAS IN MEDICINE, SURGERY, AND MIDWIFERY; AND IN DENTISTRY.

The Degrees and Diplomas in Medicine, Surgery, and Midwifery, and in Dentistry, granted by the University are as follow:—

The Degrees are:—

1. Bachelor in Medicine.
2. Bachelor in Surgery.
3. Bachelor in Obstetric Science.
4. Doctor in Medicine.
5. Master in Surgery.
6. Master in Obstetric Science.
7. Master in Dental Science.*

The Diplomas are:—

1. Diploma in Public Health (formerly Qualification in State Medicine).,
2. Diploma in Medicine.
3. Diploma in Surgery.
4. Diploma in Obstetric Science.
5. Licence in Dental Science.*

REGULATIONS FOR MEDICAL STUDENTS.

The following conditions must be fulfilled in order to qualify for the Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.):—

- I. The Student must be of B.A. standing, and his name must

* See page 320.

be for at least five (Academic) years on the Books of the Medical School, reckoned from the date of his Matriculation. He may carry on his Arts Course concurrently with his Medical Course, and he need not have taken his B.A. before presenting himself for his Final Medical Examination, but he cannot have the Medical Degrees conferred without the Arts Degree.

II. The following Courses must have been attended :—

[NOTE.—The Courses marked thus (*) must have been taken out before the Student can present himself for any part of the Final Examination. In addition, the Courses marked thus (†) must have been taken out before he can present himself for Section B; the Courses marked thus (‡) before he can present himself for the Final Examination in Midwifery; the Courses marked thus (§) before he can present himself for the Final Examination in Surgery; and the Courses marked thus (**) before he can present himself for the Final Examination in Medicine.

1. LECTURES.

WINTER COURSES.

* <i>Systematic Anatomy.</i>	* <i>Chemistry.</i>
* <i>Descriptive Anatomy, 1st year.</i>	† <i>Surgery.</i>
* <i>Descriptive Anatomy (with Dissections), 2nd year.</i>	* <i>Physiology (two Courses).</i>
* <i>Applied Anatomy (with Dissections).</i>	† <i>Practice of Medicine.</i>
* <i>Practical Physiology.</i>	‡ <i>Midwifery.</i>
	† <i>Pathology.</i>

SUMMER COURSES.

* <i>Practical Chemistry.</i>	† <i>Medical Jurisprudence and Hygiene.</i>
* <i>Practical Histology.</i>	§ <i>Operative Surgery.</i>
* <i>Botany.</i>	† <i>Practical Pathology.</i>
* <i>Zoology.</i>	
* <i>Materia Medica and Therapeutics.</i>	

TERM COURSES.

**Physics.*—Michaelmas, Hilary, and Trinity Terms.

†§** 2. HOSPITAL ATTENDANCE.

1. Three Courses of nine months' attendance on the Clinical Lectures of Sir Patrick Dun's or other Metropolitan Hospital recognised by the Board of Trinity College.

Students who shall have diligently attended the practice of a recognised London or Edinburgh Hospital for one year, of a recognised County Infirmary, or of a recognised Colonial Hospital for two years previous to the commencement of their Metropoli-

tan Medical Studies, may be allowed, on special application to the Board of Trinity College, to count the period so spent as equivalent to one year spent in a recognised Metropolitan Hospital.

****3. PRACTICAL VACCINATION.**

One month's instruction in Practical Vaccination to be attended at the Vaccine Department, Local Government Board for Ireland, 45 Upper Sackville Street; at No. 1 East Dispensary, 11 Emerald Street; or, until further notice, at the Grand Canal Street Dispensary.

****4. MENTAL DISEASE.**

A Certificate of attendance on a three months' Course of Practical Study of Mental Disease in a recognised Institution.

‡5. PRACTICAL MIDWIFERY.

A Certificate of attendance on a six months' Course of Practical Midwifery with Clinical Lectures, including not less than thirty cases.

§6. OPHTHALMIC SURGERY.

A Certificate of attendance on a three months' Course of Ophthalmic Surgery.

III. The following Examinations must be passed:—

The Previous Medical or Half M.B. Examination.

The Final Examination.

The Previous Medical Examination must be passed in all its parts before any part of the Final can be entered for, except in the case of Candidates for Diplomas.

A.—PREVIOUS MEDICAL EXAMINATION.

This Examination is divided into—

1. Physics and Chemistry.
2. Botany and Zoology.
3. Anatomy and Institutes of Medicine (Practical Histology and Physiology).

The Examination in Anatomy includes examination on the dead subject.

Before presenting himself for examination in any of the subjects the Student must have obtained credit for the corresponding Courses of Lectures and Practical Instruction.

B.—THE FINAL EXAMINATION.

The Final Examination is arranged as follows :—

FIRST PART.

SECTION A.

Applied Anatomy (Medical and Surgical), paper and *vivâ voce*,
Applied Physiology and Physiology of the Nervous System
and Sense Organs, paper and *vivâ voce*.

Materia Medica and Therapeutics, paper and *vivâ voce*.

SECTION B.

Medical Jurisprudence and Hygiene, paper and *vivâ voce*.

Medicine, paper and *vivâ voce*.

Surgery, paper and *vivâ voce*.

Pathology, paper and *vivâ voce*.

Section A may be passed in any part of the Fourth Year, provided the corresponding Curriculum shall have been completed; Section B not before Trinity Term of the Fourth Year.

Section A must be passed before the Candidate can present himself for Examination in Section B. Both Sections must be passed at least one Term before the Candidate can present himself for the Final Examinations in Surgery, Medicine, or Midwifery.

Fee for the *Liceat ad Examinandum* £5, to be paid when the Candidate enters for Section A.

SECOND PART.

MEDICINE.

Clinical Medicine.

Mental Disease (Paper).

SURGERY.

Clinical Surgery.

Operations.

Ophthalmic Surgery (Clinical).

MIDWIFERY.

Midwifery, paper and *vivâ voce*.

Gynæcology, paper and *vivâ voce*.

Obstetrical Anatomy, paper.

One Section of the Second Part must be passed in Trinity Term of the Fifth Year, or subsequently. The other two may be passed in any Term of the Fifth Year, provided the corresponding Curriculum shall have been completed. Subject to this provision the Sections may be taken in any order.

Fee for the *Liceat ad Examinandum* £5, to be paid when the

Candidate enters for the Section for which he first presents himself.

The Candidate must also produce Certificates of attendance at the Hospitals where the Courses prescribed for each Section are to be taken out.

UNIVERSITY DIPLOMAS.

Candidates for the Diplomas in Medicine, Surgery, and Obstetric Science must be matriculated in Medicine, and must have completed two years in Arts, and five years in Medical Studies.

The dates, regulations, and subjects of Examination are the same as for the Final Examination, except that it is not necessary to attend the Courses of Lectures in Botany and Zoology, or to pass the Previous Medical Examination in these subjects.

A Diplomate on completing his Course in Arts and proceeding to the Degree of B.A. may become a Bachelor, by attending the Lectures on Botany and Zoology, passing the Previous Medical Examination in those subjects, and paying the Degree Fees.

The *Liccat* fees are the same as for the Finals.

Each Candidate who has completed the prescribed Courses of study and passed all the Examinations will be entitled, if a Graduate in Arts, to have conferred on him the Degrees of M.B., B.Ch., B.A.O.. on payment to the Senior Proctor of the Degree Fees amounting to £17. A corresponding regulation applies to the Diplomas, the Fees for which are £11.

NEW REGULATIONS.

Students who enter the School in or after the Summer Session, 1906, will obtain the Degrees (or Diplomas) in Medicine, Surgery, and Midwifery, as follows^a :—

I. *Arts Course*.—Before they can join the Medical School they must pass (a) a Junior Freshman Term Examination, or (b) a Special Preliminary Examination to be held in March, the standard and subjects of which shall be those of a Junior Freshman Examination, with the exception of Trigonometry. They obtain credit for the Final Freshman Examination by attending Arts Lectures in Mechanics—including the necessary amount of Trigonometry—English Composition and Logics in the Trinity Terms of the Junior

^aIn and after October, 1906, the Medical Course of Lectures in Physics will be extended by adding to the present Course of Lectures in Experimental Science (a) an introductory six weeks' Course of Lectures in Mechanics, commencing immediately after the Preliminary in October; and (b) a Course of Practical Physics.

and Senior Freshman years, passing the Preliminary Scientific Examination in full, and an Examination in Mechanics, Logics, English Composition, and *one* language, viz. :—French, German, Latin, or Greek. The Examination in Mechanics may be taken at the Ordinary Final Freshman or at a special Examination to be held at the date of the Preliminary Scientific in Physics and Chemistry.

They obtain credit for B.A. thus :—

(a) They attend Courses of Lectures in Astronomy and in Ethics in the Trinity Terms of the Junior and Senior Sophister years, respectively, and write a composition on some subject connected with the Course on one lecture-day in each week.

(b) At the conclusion of the Astronomy Lectures they pass an Examination held by the Lecturers.

(c) They produce evidence of satisfactory progress in the Medical studies of their third and fourth years (see p. 301 ; Class Examinations).

(d) They pass at the B.A. Examination in the Ethics Course (a, above) and in English Composition, and Part II. of the Intermediate Medical Examination.

II. *Medical Course.*—They produce evidence of having passed the Special Preliminary Examination, or its equivalent (see above), pay a Matriculation fee of 5s., and proceed with the following Courses and Examinations :—

FIRST YEAR—

First Winter^a—

Chemistry Lectures	..	..	£2	2	0
Physics and Mechanics Lectures	..	..	—
Practical Physics	..	..	not	arranged	
Systematic Anatomy Lectures	..	..	3	3	0
Descriptive Anatomy Lectures	..	..	3	3	0
Dissections	..	..	5	5	0
			<hr/>		
			£13	13	0 + x

First Summer—

Botany	..	..	..	£1	11	6
Practical Botany	..	..	..not	arranged		
Zoology	..	..	..	1	11	6
Practical Zoology	..	..	..not	arranged		
Practical Chemistry	..	..	..	3	3	0
				<hr/>		
				£6	6	0 + x

^a In the Table of Fees here given certain specified Reductions granted to Students in Arts have already been made.

PRELIMINARY SCIENTIFIC.

The subjects are—(a) Chemistry and Physics, and (b) Zoology and Botany. All the subjects may be passed at the same time, or they may be passed in two groups (a) and (b).

Before presenting themselves for this Examination, Students must have attended the recognised Courses of Instruction in the subjects of the Examination.

SECOND YEAR—

Second Winter—

Anatomy Lectures	..	..	£3	3	0
Physiology, Lectures and Practical			3	3	0
Dissections	..	..	5	5	0
Hospital Elementary Instruction ^a	..		12	12	0
			<hr/>		
			£24	3	0

Second Summer—

Histology	5	5	0
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· INTERMEDIATE MEDICAL, PART I.

The subjects are—Anatomy, Histology, and Physiology (omitting the Physiology of the Sense-Organs, and of the Central Nervous System). Both subjects must be passed at the same time.

Before presenting themselves for the Examination, Students must have attended the Courses of Instruction prescribed for the First and Second years of Medical study, and *must have completed the Preliminary Scientific Examination.*

The Examination will consist of a paper, a practical, and an oral in each subject.

THIRD YEAR—

Third Winter^b —

Applied Anatomy Lectures	..	..	£3	3	0
Physiology Lectures	..	..	3	3	0
Physiology (Practical)	..	..	2	2	0
Surgery	..	..	2	2	0
Hospital Practice	..		12	12	0
			<hr/>		
			£23	2	0

^a Hospital attendance cannot be commenced until the student has obtained credit for six months' dissections.

^b Students who have credit for two years' dissections in Trinity College will be allowed to dissect in their third year on payment of £2 2s. for

INTERMEDIATE MEDICAL, PART II.

The subjects are—Applied Anatomy and Applied Physiology (including the Physiology of the Nervous System and of the Sense-Organs). Both subjects must be passed at the same time.

Before presenting themselves for the Examination, Students must have attended the prescribed Courses of study, and *have completed Part I. of the Examination.*

The Examination will consist of a paper and an oral in each subject.

Third Summer—

Materia Medica and Therapeutics	..	£3	3	0
Operative Surgery ^a	.. ..	2	12	6
<hr/>				
		£5	15	6

N.B.—The Courses of the Fourth Year cannot be commenced until Part II. of the Intermediate Examination has been completed.

FOURTH YEAR—

Fourth Winter—

Practice of Medicine	£3	3	0
Midwifery	3	3	0
Pathology ^b	2	2	0
Hospital Practice	12	12	0
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		£21	0	0	

Fourth Summer—

Medical Jurisprudence and Hygiene	..	£3	3	0
Practical Pathology	2	2	0
<hr/>				
		£5	5	0

FINAL MEDICAL, PART I.

The subjects are—Pathology, Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene. All the subjects must be passed at the same time.

Before they are admitted to the Examination, Students must three months, or £3 3s. for six months' dissection. This arrangement will hold good only for the years 1904-5 and 1905-6.

Students who have credit for two years' dissections in Trinity College, and wish to dissect during the fourth or fifth year, can do so on payment of Two Guineas for the Winter Session.

^a Operative Surgery may be taken by those Students only who have completed Part II. of the Intermediate Examination.

^b Freshman Students pay £3 8s.

have attended the prescribed Courses of study, and paid the *Liceat* Fee (£5).

Vaccination (Fee, £1 1s.) should be taken out in the fourth year.

FIFTH YEAR—

Practical Midwifery	..	..	£10	10	0
Mental Disease	..	..	3	3	0
Ophthalmic Surgery	..	..	3	3	0
<hr/>					
			£16	16	0

..

FINAL MEDICAL, PART II.

The subjects are—(a) Medicine, Clinical Medicine, and Mental Disease; (b) Surgery, Clinical Surgery, Surgical Operations, and Ophthalmic Surgery; (c) Midwifery and Gynæcology.

No Candidate can pass in Medicine or in Surgery who fails to obtain 50 per cent. of the marks in the Clinical Examination.

The Clinical Examinations will be in each case held before the papers and orals, and candidates who fail to obtain 50 per cent. in the Clinical will not be permitted to present themselves for the other parts of the Examination.

The Examination in Mental Disease will take the form of an oral, and be held at an Asylum; Candidates being required to fill up a form of certificate (such as is used for the committal of a lunatic to a public asylum) from their personal examination of a patient.

Students may present themselves for Examination in any of these groups (a), (b) or (c), separately, or together, at either of the Examinations during their Fifth Year; but they must leave at least one of these groups until the end of their Fifth Year. Before presenting themselves for any of these Groups, Students must have attended all the prescribed Courses of Instruction in the subject in which they present themselves for Examination, and paid the *Liceat* Fee (£5).

TOTAL EXPENSES OF FOREGOING COURSES.

I. Lectures	..	..	£66	13	6
II. Hospitals	..	..	55	13	0
III. Degrees (B.A.O, B.Ch., M.B.)	..	..	27	0	0
<hr/>					
TOTAL	..	..	£149	6	6+x

The new Regulations as to Examinations will bind all Students in the School who have not completed their Examinations by Michaelmas Term, 1905. They will be given credit for all the subjects in which they have passed, but must present themselves for the remainder at the Examinations named in the foregoing course of study.

CLASS EXAMINATIONS.

Students will be required to show a reasonable knowledge as ascertained by Examination during the Session, of the subject of a Course of Lectures before a certificate of satisfactory attendance is issued by the Professor in charge, and the return to the Senior Lecturer is to include a statement that this condition has been fulfilled.

DATES OF EXAMINATIONS FOR MARCH AND JUNE, 1906.

Preliminary Scientific begins—March 12 ; June 21.

Intermediate Medical, Part I., begins—March 12 ; June 25.

Intermediate Medical, Part II., begins—March 19 ; June 28.

Final Medical, Part I., begins—June 18.

Final Medical, Part II., begins—March 19 ; June 25.

HOSPITAL ATTENDANCE.

Three Courses of nine months' attendance on the Clinical Lectures of Sir Patrick Dun's or other Metropolitan Hospital recognised by the Board of Trinity College are required.

During the first three months of the Winter Session in which he begins his Hospital work, the Student must attend an Elementary Course of Hospital Instruction for one hour per day.

This certificate must be signed by all the Teachers who have taken part in the Instruction, and the attendances of each day must be entered in a book supplied by the Board of Trinity College, and initialled by the teachers for that day.

That during other years also a record of attendance at Hospital be required by the Board of Trinity College.

Students who shall have diligently attended the practice of a recognised London or Edinburgh Hospital for one year, of a recognised County Infirmary, or of a recognised Colonial Hospital for two years previous to the commencement of their Metropolitan Medical Studies, may be allowed, on special application to the

Board of Trinity College, to count the period so spent as equivalent to one year spent in a recognised Metropolitan Hospital.

DIPLOMA IN PUBLIC HEALTH OR STATE MEDICINE.

The Diploma in Public Health is conferred, after examination by the University of Dublin, upon Candidates fulfilling the following conditions:—

1. The Candidate must be a Doctor in Medicine, or Graduate in Medicine and Surgery, of Dublin, Oxford, or Cambridge.

2. The name of the Candidate must have been on the Medical Register at least twelve months before admission to any part of the Examination.

3. The Candidate must have completed, subsequent to Registration, six months in a Laboratory, recognised by the Provost and Senior Fellows, in practical instruction in Chemistry and Bacteriology applied to Public Health, and also have attended, practically, outdoor Sanitary work for six months, under an approved Officer of Health.*

4. The Candidate must, after obtaining a registrable Qualification, have attended during three months the practice of a Hospital for Infectious Diseases at which opportunities are afforded for the study of Methods of Administration.*

NOTE 1.—Methods of Administration shall include methods of dealing with patients at their admission and discharge, as well as in the wards, and the Medical Superintendence of the Hospital generally.

NOTE 2.—In the case of a Medical Officer of the Royal Army Medical Corps, a Certificate from a Principal Medical Officer under whom he has served, stating that he has, during a period of at least three months, been diligently engaged in acquiring a practical knowledge of Hospital Administration in relation to Infectious Diseases, may be accepted as evidence under *Rule 4*.

The Examination to be passed by the Candidate is prescribed as follows:—

PART I.

Chemistry, paper and practical.

Experimental Physics and Meteorology, practical.

Bacteriology and Pathology, paper and practical.

Candidates are liable to be examined in the method of conducting *post-mortem* Examinations.

* These conditions do not apply to Practitioners registered, or entitled to be registered, on or before January 1, 1890.

PART II.

Hygiene and Epidemiology, paper.

Sanitary Engineering, paper.

Public Health Acts and Vital Statistics, paper.

Practical Sanitary Report.

The two Parts may be passed consecutively or with an interval between, at the option of the Candidate, provided that the requisite curriculum for each Part has been completed before the Candidate presents himself.

Examinations for Part I. will begin on December 11, 1905, March 19, 1906, and June 11, 1906; for Part II. on December 15, 1905, March 22, 1906, and June 14, 1906.

Candidates are required to send in their names to the Registrar of the School of Physic at least a week before the first day of Examination.

Candidates who have registered since January 1, 1890, are required to apply to the Board of Trinity College for leave to present themselves, a month before the Examination begins, and to submit at the same time Certificates of the required Courses of Study.

A fee of £10 10s. (to be paid to the Senior Proctor) is required.

COURSE IN CHEMISTRY FOR D. P. H.

The complete analysis of water. Estimation of carbon dioxide, and detection of ammonia and other constituents or impurities, air. Complete analysis of milk and butter. Detection of adulterants in milk, flour, tea, coffee, mustard, and pepper. Detection of preservatives in foods. Detection of picric acid in beer and of alum in bread and flour. Microscopic examination of starches. Determination of acidity in vinegar. Identification and examination of disinfectants. Detection of various poisons in contents of stomach. General chemistry of ether, chloroform, nitric acid, chloral. Assay of caffeine.

Fee for the Course, £5 5s.

Candidates can join at any time during the Medical year by arrangement with the Professor of Chemistry.

A collection of Sanitary Appliances has been placed in the Engineering Museum, with which Candidates should make themselves familiar.

The attention of Students is directed to the importance of obtaining a Diploma in Public Health as soon as possible after they obtain their Medical Degrees. An increasing number of Public Bodies are requiring it as well as the usual Qualifications in Medicine, Surgery, and Midwifery.

II.

ROYAL UNIVERSITY OF IRELAND.

COURSES FOR DEGREES IN MEDICINE, SURGERY, AND
OBSTETRICS.

General Regulations.

The Course for these Degrees shall be of at least five Medical years' duration ; but Graduates in Arts or Science who shall have spent a year in the study of Physics, Chemistry, and Biology, and have passed an Examination in these subjects for the Degrees in question, shall be held to have completed the first of the five years of Medical Study.

Students who commenced their Medical Studies after Jan. 1, 1892, must furnish evidence of having been registered by the General Medical Council, as Students in Medicine, for at least 57 months, before being admitted to the M.B., B.Ch., and B.A.O. Degrees Examination.

No one can be admitted to a Degree in Medicine who is not twenty-one years of age.

All Candidates for these Degrees, in addition to attending the lectures and complying with the other conditions to be from time to time prescribed, must pass the following Examinations:—

The Matriculation Examination.

The First University Examination.

The First Examination in Medicine.

The Second Examination in Medicine.

The Third Examination in Medicine.

The Examination for the M.B., B.Ch., B.A.O. Degrees.

The Course of Medical Studies shall be divided into five Periods of one Medical Year each.

Candidates shall furnish proper Certificates of attendance at the several Courses of Medical Instruction prescribed for the different years of the curriculum.

No such certificate will be received unless it attests a *bonâ fide* attendance at three-fourths of the whole Course. *Students are reminded that certificates of attendance at Night Lectures will not be accepted.*

No Certificates of instruction in any of the Courses of Medical Studies, in connection with either Lectures or Hospitals, can be received, unless issued by an Institution which has been formally recognised by the Senate. ●

The prescribed courses in Natural Philosophy, Chemistry, Biology, Anatomy and Physiology must be attended in Institutions provided with the appliances required for the performance by the

Students of proper Experimental Courses and Practical Work in these subjects.

Where Certificates in a special department (Fever, Mental Diseases, Ophthalmology, &c.) are presented, they must be signed by the Physician or Surgeon in charge of such department.

THE EXAMINATION FOR THE M.B., B.Ch., B.A.O. DEGREES.

Candidates may present themselves for this Examination after an interval of such period, not being less than one Medical Year from the time of passing the Third Examination in Medicine, as the Senate may from time to time prescribe, provided they shall have completed the entire Medical Curriculum.

Printed forms of application for admission to this Examination may be had from "The Secretaries, the Royal University of Ireland, Dublin."

This Examination consists of three parts:—

- (a.) Medicine, Theoretical and Clinical, including Therapeutics, Mental Diseases, Medical Jurisprudence, Sanitary Science, and Medical Pathology.
- (b.) Surgery, Theoretical, Clinical, and Operative, including the use of Instruments and Appliances; Surgical Anatomy; Ophthalmology and Otology,* Surgical Pathology.
- (c.) Midwifery and Diseases of Women and Children.

In and after 1905, the M.B., B.Ch., B.A.O. Degrees Examination will be conducted in the following manner:—

- I. In the Spring, and again in the Autumn, of each year, two separate Examinations will be held simultaneously, one for Pass Candidates only, the other for Honour Candidates only. When entering, each Candidate must state at which of these Examinations he elects to be examined. A Candidate who has entered for the Honour Examination may be allowed to change to the Pass Examination, on giving to the Secretaries a satisfactory reason for doing so, at least one week before the commencement of the examination; but under no circumstances will a candidate who has entered for the Pass Examination be allowed to change to the Honour Examination.

* Candidates at this Examination must exhibit reasonable proficiency in the use of the Ophthalmoscope and Laryngoscope.

II. Honours and Exhibitions will be awarded on the results of the Honour Examination alone.

III. Candidates at the Honour Examination, whose answering may not be such as to qualify them for Honours, may nevertheless be adjudged to have passed the Examination provided they exhibit in their answers knowledge equivalent to what is required from Candidates who satisfy the Examiners at the Pass Examination.

All Candidates must enter for and go through the entire Examination, but a Candidate, at either the Pass or the Honour Examination, may be adjudged to have passed in any of the foregoing parts in which he satisfies the Examiners.

Upon completing satisfactorily his Examination in all three divisions, the Candidate will receive, in addition to the parchment Diplomas recording his admission to the M.B., B.Ch., B.A.O. Degrees, a Certificate of having passed a Qualifying Examination in the subjects of Medicine, Surgery, and Midwifery.

The fee for this Certificate is *Ten Pounds*, which must be paid before admission to these Degrees.

HONOURS.

There are Special Examinations for Honours in connection with—

The First Examination in Medicine.

The Second Examination in Medicine.

The Third Examination in Medicine.

The M.B., B.Ch., B.A.O. Degrees Examination.

The Examinations for Honours are held subsequently to the corresponding Pass Examinations.

DIPLOMA IN PUBLIC HEALTH.

This Diploma is conferred only on Graduates in Medicine of the University.

Candidates may present themselves for this Examination after an interval of twelve months from the time of obtaining the M.B., B.Ch., B.A.O. Degrees.

Printed forms of application for admission to this Examination may be had from "The Secretaries, the Royal University of Ireland, Dublin."

Every Candidate must, when entering for the Examination, produce^a:—

- (a.) A Certificate of having, *after obtaining the M.B., B.Ch., B.A.O. Degrees*, attended during a period of six months Practical Instruction in a Laboratory approved by the University. The nature of this course is fully indicated by the detailed Syllabus of the Examinations in Physics, Climatology, Chemistry, Microscopy, Bacteriology, &c.
- (b.) A Certificate of having, *after obtaining the M.B., B.Ch., B.A.O. Degrees*, during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under (a.)) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health Administration, under the supervision of:—
 - (1.) In England and Wales, the Medical Officer of Health of a County or of a single Sanitary District having a population of not less than 50,000, or a Medical Officer of Health devoting his whole time to Public Health Work; or
 - (2.) In Scotland, a Medical Officer of Health of a County or Counties, or of one or more Sanitary Districts having a population of not less than 30,000; or
 - (3.) In Ireland, a Medical Superintendent Officer of Health of a District or Districts having a population of not less than 30,000; or
 - (4.) A Medical Officer of Health who is also a Teacher in the Department of Public Health of a recognised Medical School; or
 - (5.) A Sanitary Staff Officer of the Royal Army Medical Corps having charge of an Army Corps, District, or Command, recognised for this purpose by the General Medical Council; or
 - (6.) In the British Dominions outside the United Kingdom, a Medical Officer of Health of a Sanitary District having a population of not less than 30,000, who himself holds a registrable Diploma in Public Health.

* * The certificate of an Assistant Medical Officer of Health of a County or of a single Sanitary District having a population of not less than 50,000 may be accepted as evidence under *Rule (b.)*, provided the Medical Officer of Health of the County or District in

^a These rules (a), (b), shall not apply to Medical Practitioners registered, or entitled to be registered, on or before January 1, 1890.

question permits the Assistant Officer to give the necessary instruction and to issue Certificates. Provided that the period of six months may be reduced to a period of three months (which shall be distinct and separate from the period of laboratory instruction required under *Rule (a.)*, in the case of any Candidate who produces evidence that, after obtaining a registrable Qualification, he has during three months attended a course or courses of instruction in Sanitary Law, Sanitary Engineering, Vital Statistics, and other subjects bearing on Public Health Administration, given by a Teacher or Teachers in the Department of Public Health of a recognised Medical School.

Every Candidate must produce evidence that, after obtaining a registrable Qualification, he has attended during three months the practice of a Hospital for Infectious Diseases at which opportunities are afforded for the Study of Methods of Administration.

Candidates at this Examination must answer in the following subjects:—

- I. Physics.
- II. Chemistry.
- III. Meteorology.
- IV. Sanitary Engineering and Architecture.
- V. Bacteriology.
- VI. Hygiene, Sanitary Law, and Vital Statistics.

There will be a practical examination, both chemical and microscopical, at which the candidate must make at least qualitative analyses.

In connection with the subjects of Sanitary Engineering and Architecture, candidates will be required to draw up a Sanitary Report upon the condition of dwelling-houses or other buildings selected for the purpose, and to read plans, scales, sections, &c.

The Examination consists of two parts, which may be passed separately or together.

Part I. comprises the following subjects:—

- Physics.
- Chemistry.
- Meteorology.
- Sanitary Engineering and Architecture.

Part II. comprises the following subjects:—

- Bacteriology.
- Hygiene, Sanitary Law, and Vital Statistics.

The Examination in each part is oral and practical as well as written.

DIPLOMA IN MENTAL DISEASES.

This Diploma is conferred only on Graduates in Medicine of the University.

Printed forms of application for admission to this Examination may be had from "The Secretaries, the Royal University of Ireland, Dublin."

The subjects for this Examination are those prescribed for the Hutchinson Stewart Scholarship for proficiency in the treatment of Mental Diseases.

BELFAST.

QUEEN'S COLLEGE.

Clinical instruction is given at the Belfast Royal Victoria Hospital. The Ulster Hospital for Diseases of Women and Children, the Belfast Maternity Hospital, the Belfast Ophthalmic Hospital, the Ulster Eye, Ear, and Throat Hospital, the Belfast District Lunatic Asylum, and the Belfast Hospital for Sick Children are open to students.

A pamphlet containing full information can be had free on application to the Registrar, Queen's College, Belfast.

CORK.

QUEEN'S COLLEGE.

Clinical instruction is given at the North and South Infirmaries (each 100 beds). Students also can attend the Mercy Hospital (60 beds), the Cork Union Hospital, the County and City of Cork Lying-in-Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session at Queen's College extends from October to April inclusive (twenty-seven weeks), but the hospitals are open to students in May, June, and July also, and arrangements have been made for the delivery of some of the three months' Courses of Lectures during the months of April, May and June.

GALWAY.

QUEEN'S COLLEGE.

Clinical instruction is given at the Galway County Infirmary and the Galway Town Hospital.

Prizes.—Attached are eight scholarships of the value of £25 each. The Council may award Exhibitions to matriculated

students at the examinations for junior scholarship. All scholarships and exhibitions of the second, third, and fourth years may be competed for by students who have attained the requisite standing in any medical school recognised by the College Council, and have passed the Matriculation Examination in the College, or in the Royal University of Ireland.

III.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS, IRELAND.

REGULATIONS FOR THE EXAMINATIONS IN MEDICINE, SURGERY, AND MIDWIFERY REQUIRED FOR REGIS- TRATION UNDER THE MEDICAL ACT, 1886.

*These Regulations are obligatory on all Candidates commencing their
Studies on or after October 1st, 1902.*

PRELIMINARY EXAMINATION AND REGISTRATION.

The General Medical Council requires that every Candidate shall produce evidence—

- (a) Of having, before entering on medical studies, passed a Preliminary Examination in general education recognised by the General Medical Council; and
- (b) Of having been registered by that Council as a Student in Medicine, according to Regulations, which may be obtained on application at the office of the General Medical Council, 299 Oxford Street, London, W., or its Branches—
Dublin, 35 Dawson Street; Edinburgh, 54 George Square.

Each Candidate before receiving his Diplomas must produce a Registrar's Certificate, or other satisfactory evidence, that he has attained the age of twenty-one years.

PROFESSIONAL EXAMINATIONS.

Every Candidate is required to pass four Professional Examinations.

Candidates will be admissible to the various Examinations as under :—

- First Professional Examination not earlier than end of first winter session.

Second Professional Examination not earlier than end of second winter session.

Third Professional Examination not earlier than end of the third year of medical study.

Final Professional Examination not earlier than end of fourth year of medical study, but it cannot be completed till the end of the fifth year of medical study.

Before admission to any Examination every Candidate will be required to furnish evidence of having passed the previous Examination, and of having attended the various courses of instruction laid down in these Regulations for each Examination.

No Candidate shall be admitted to any Examination within three months of his rejection in the subjects of that Examination by this or any other Licensing Body.

FIRST PROFESSIONAL EXAMINATION.

FEES.

The Fee for this Examination is £15 15s.

SUBJECTS OF EXAMINATION.

The subjects of the First Professional Examination are :—

1. Chemistry and Physics.
2. Biology.

Every Candidate is required to produce evidence—

1. Of having passed in the subjects of the Preliminary Examination ; and

2. Of having attended Courses of Instruction in

Winter { (a) Theoretical Chemistry ; six months.
(b) Physics ; six months.

Summer { (c) Practical Chemistry ; three months.
(d) Biology ; three months.

Four complete years of Medical Study must be attended at a recognised Medical School after passing the First Professional Examination, and before completing the Final Examination.

NOTE.—The subjects of the First Professional Examination may be studied either at a Medical School, or at an Institution other than a Medical School recognised by the Colleges, after due inspection, for instruction in these subjects.

SECOND PROFESSIONAL EXAMINATION.

FEES.

The Fee for this Examination is £10 10s.

SUBJECTS OF EXAMINATION.

The subjects for the Second Professional Examination are :—

- | | | |
|-------------|--|------------------------------|
| 1. Anatomy. | \| | 2. Physiology and Histology. |
|-------------|--|------------------------------|

Every Candidate is required, before admission to the Second Professional Examination, to produce evidence of having passed the First Professional Examination ; also Certificates of having attended :—

Anatomical Dissections ; two courses of six months each ;
or one course of six months and two courses of three months.*

Lectures :—

- | | | |
|--------|-----|--|
| Winter | { | (a) Anatomy ; six months. |
| | | (b) Physiology ; six months. |
| Summer | (c) | Practical Physiology and Histology ; three months. |

THIRD PROFESSIONAL EXAMINATION.

FEES.

The Fee for this Examination is £9 9s.

SUBJECTS OF EXAMINATION.

The subjects for the Third Professional Examination are :—

1. Pathology.
2. Materia Medica, Pharmacy, and Therapeutics.
3. Forensic Medicine and Public Health.

Candidates are not admitted to this Examination before the end of the third year of Medical Study.

Every Candidate is required, before admission to the Third Professional Examination, to produce evidence of having passed the Second Professional Examination, and Certificates of having attended courses of instruction in—

(a) Pathology.

- | | | |
|--------|---|--|
| Winter | { | (1) A Systematic Course of three months. |
| | | (2) A Laboratory Course of practical instruction in
a recognised Medical School ; three months. |

These Courses may be taken concurrently.

* One of the two Courses of Dissections necessary for the Second Professional Examination should be taken out in the First Year, although not required for the First Professional Examination.

Summer { (b) *Materia Medica*, Pharmacy, and Therapeutics;
three months.
(c) Public Health and Forensic Medicine; three months.^a

Candidates are recommended to present themselves at the same time in all the subjects of each of the above Examinations; but may present themselves in one or more of the specified divisions separately, provided they have completed the curriculum as far as concerns the subjects or subject in which they present themselves.

FINAL PROFESSIONAL EXAMINATION.

FEEs.

The Fee for this Examination is £6 6s.

SUBJECTS OF EXAMINATION.

The subjects of the Final Professional Examination are divided into three groups:—

1. Medicine, including Fevers, Mental Diseases, and Diseases of Children.
2. Surgery, including Operative and Ophthalmic Surgery.
3. Midwifery and Gynæcology, Vaccination, and Diseases of New-born Children.

Every Candidate is required before admission to produce evidence—

1. Of having passed the Third Professional Examination.
2. Of having attended—
 - (a) A Medico-Chirurgical Hospital for twenty-seven months (three Hospital years).
 - (b) A Midwifery Hospital, or Maternity, including evidence of having been present at thirty labours; six months.
 - (c) Clinical Instruction in Ophthalmic and Aural Surgery; three months.
 - (d) Clinical Instruction in Mental Diseases; one month.
 - (e) Vaccination, Six Attendances to be signed by a Public Vaccinator.^b

^a Nine of the twenty-seven months' Hospital necessary for the Final Professional Examination should be taken out in the Third Year.

^b By a Regulation of the English Privy Council no one can be appointed a public vaccinator in England who does not produce a certificate of proficiency in vaccination from a person authorised by the English Privy Council to grant same.

(f) Courses of Instruction at a recognised Medical School in—

- (a) Medicine ; six months.
- (b) Surgery ; six months.
- (c) Operative Surgery ; three months.
- (d) Midwifery (including diseases peculiar to women and to new-born children) ; six months.

Before admission to the Final Professional Examination in Medicine, satisfactory evidence must be produced of attendance in Fever Wards during either the third or subsequent year of Hospital attendance.

A Student at or after the end of his fourth year may present himself at any one of the groups 1, 2, or 3, provided he has completed his curriculum as far as concerns the group in which he presents himself. But one of the groups must be deferred till the end of his fifth year.

Candidates must have passed in *all* the Subjects of the Final Examination before any Diploma can be granted.

NOTE 1.—In the event of a Candidate showing himself ignorant of a subject or subjects, it shall be competent for the Committee of Management, on the recommendation of the Examiners, to require such Candidate, before presenting himself for re-examination, to produce evidence of such further instruction in such subject or subjects as the Committee of Management shall direct.

NOTE 2.—This curriculum shall be compulsory on all Students who commence their professional studies after the date of its adoption by the Colleges ; and all Students at present studying under the old regulations shall be permitted to present themselves for examination under the new scheme at and after the Autumn Examinations, 1902 : provided that, if any Student have presented himself for examination under the new scheme, he shall not be permitted to revert to the old scheme.

NOTE 3.—After the 1st of October, 1905, it shall be compulsory on all Students to present themselves under the new curriculum, save for such exemptions as the Committee of Management may decide to be necessary in order to prevent injustice.

NEW REGULATIONS.

Existing Candidates will be permitted to come under the foregoing Revised Scheme, 1902, as undernoted :—

FIRST PROFESSIONAL EXAMINATION.

Candidates who have passed in Biology, Chemistry and Physics can proceed to the Second Professional Examination.

SECOND PROFESSIONAL EXAMINATION.

Candidates who have passed in Anatomy, Senior Physiology and Histology can proceed to the Third Professional Examination.

NOTE.—Separate credit will not be allowed for Physiology and Histology, which are now grouped as one subject.

Candidates under the former Regulations, who have passed in Part I. of the Second Professional Examination, can forthwith proceed to an Examination in Advanced Physiology alone.

THIRD PROFESSIONAL EXAMINATION.

Candidates who have passed in Pathology, Therapeutics, and Forensic Medicine may proceed to the Final Examination. Candidates who have already passed in either Pharmacy or Materia Medica will be exempt from Examination in these subjects.

FINAL EXAMINATION.

No exemptions are allowed from any portion of the Final Examination,

EXEMPTIONS.

Candidates who, subsequent to 1st January, 1892, have passed in any of the required subjects at Examinations conducted by any Licensing Body recognised by the Royal College of Physicians and Royal College of Surgeons may, on application to the Committee of Management, be exempted from further examination in such subjects under this Conjoint Scheme.

Certificates of Study.

Winter Courses shall consist of not less than 50 Lectures, and Summer Courses of not less than 30 Lectures.

No Lecture Certificate shall be received unless the number of attendances certified thereon shall be at least *two-thirds* of these numbers.

As regards Medical and Surgical Hospital Certificates, the number of daily attendances certified shall not be less than 80 for the Winter Session, and 40 for the Summer Session.

Every Candidate shall produce evidence of having acted as Medical Clinical Clerk for three months, and as Surgical Dresser

for three months. These appointments cannot be held concurrently.

In Mental Diseases 12 attendances will be required.

MATRICULATION AS PUPIL OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

All persons proceeding to the study of Medicine may, if approved by the Council, become matriculated pupils of the College on payment of five guineas, and having done so, will enjoy the following privileges:—

1. They will, if matriculated before the preliminary examination, be admitted on payment of £1 1s. (half fee).
2. They will be permitted to study in the Library and Museums of the College.
3. Their fee for the First Professional Examination will be reduced by £5 5s.

DATES OF CONJOINT EXAMINATIONS.

Preliminary	-	-	-	March and September.
First Professional	-	-	-	April, June, and October.
Second	„	-	-	April, July, and October.
Third	„	-	-	April, July, and October.
Final Examination	-	-	-	April, July, and October.
Supplemental Final Examination				January.

REGULATIONS FOR CANDIDATES FOR THE DIPLOMA IN PUBLIC HEALTH.

The following regulations are compulsory on all Candidates presenting themselves for Examination after January 1st, 1902, except as undernoted.

Stated Examinations for the Diploma in Public Health commence on the first Tuesday of the months of February, May, and November, and occupy four days.

A special Examination for the Diploma can be obtained—except in the months of August and September—on payment of £10 10s., in addition to the ordinary Fees mentioned below, and on giving notice at least one fortnight before the date of the proposed Examination.

Every Candidate for the Diploma in Public Health must be a Registered Medical Practitioner, or hold a registrable Qualification. He must return his name to the Secretary of the Committee of Management under the Conjoint Scheme, Royal College

of Physicians, Dublin, three weeks before the Examination, and lodge with him a Testimonial of Character from a Fellow of either of the Colleges, or of the Royal Colleges of Physicians or Surgeons of London or Edinburgh, together with certificates of the prescribed course of study.

Candidates registered as Medical Practitioners or entitled to be so registered after January 1st, 1890, must comply with certain Resolutions passed by the General Medical Council on December 1st, 1893, in regard to Diplomas in State Medicine.

. The *Rules* as to study shall not apply to Medical Practitioners registered, or entitled to be registered, on or before January 1st, 1890.

. The Executive Committee [of the General Medical Council] has power, in special cases, to admit exceptions to the Rules for the Registration of Diplomas in Sanitary Science, and report the same to the General Council.

The Fee for the Examination is Ten Guineas, which must be lodged in the Ulster Bank, Dublin, to the credit of the Committee of Management, at least two weeks before the date fixed for the Examination. Fees are not returned to any Candidate who withdraws from, or is rejected at, any Examination. The Fee for re-examination is Five Guineas.

The Examination for the Diploma in Public Health comprises the following subjects:—Chemistry and Chemical Physics, Meteorology, Engineering and Architecture, Hygiene, Morbid Anatomy, Vital Statistics, Sanitary Law. There is an Examination in the Laboratory, and also an Oral and Practical Examination.

IV.

APOTHECARIES' HALL IN IRELAND.

The First, Second, and Third Professional Examinations are held four times a year—viz., commencing the third Monday in January, April, July, and October.

The Final Examinations are held in January and July.

The Fees payable for each Examination are as follow:—

First Professional	-	-	£5	5	0
Second „	-	-	5	5	0
Third „	-	-	5	5	0
Final Examination	-	-	6	6	0

A Candidate is allowed for each Professional Examination which he has completed at any other Licensing Body, except the Final.

Ladies who comply with the regulations will be admitted to these examinations.

Candidates may be admitted to a Special Examination, under special circumstances, which must be laid before the Examination Committee. If the Candidate's application be granted, an extra fee of Ten Guineas over and above the full fee is required.

Candidates already on the Register will receive the Diploma of the Hall, on passing an Examination in the subjects which are not covered by their previous qualifications, and on paying a fee of Ten Guineas. If Medicine or Surgery is required, additional fees will be charged.

COURSE OF STUDY FOR THE DIPLOMA.

Candidates who desire to obtain the Letters Testimonial of the Apothecaries' Hall in Ireland must, before proceeding to the Final Examination, produce evidence of having been registered as a Medical Student for 57 months; also of having attended Courses of Instruction as follows:—

Winter Courses of Six Months.

One Course each of the following:—

- Anatomy (Lectures).
- Chemistry—Theoretical.
- Midwifery.
- Practice of Medicine.
- Physiology, or Institutes of Medicine.
- Surgery.
- Dissections, two courses of six months each.

Courses of Three Months.

One Course of each of the following:—

- Materia Medica.
- Medical Jurisprudence.
- Chemistry—Practical.
- Practical Physiology and Histology.
- Operative Surgery.
- Physics.
- Clinical Ophthalmology.
- Biology.
- Clinical Instruction in Mental Disease.
- Pathology.
- Vaccination.

Medico-Chirurgical Hospital, twenty-seven months, to be distributed at the Student's own discretion over the last four years of

his study. The Candidate may substitute for nine months of this Hospital Attendance six months as a Resident Pupil. He will be required to present a certificate of having taken notes of at least six Medical and six Surgical cases recorded under the supervision respectively of a Physician and of a Surgeon of his Hospital.

Three months' study of Fever—which may be included in his twenty-seven months' Hospital Attendance—in a Hospital containing Fever Wards, and having taken notes of five cases of Fever—viz., either Typhus, Typhoid, Scarlet Fever, Small-pox or Measles.

Six months' Practical Midwifery and Diseases of Women during the Winter or Summer of the third or the fourth year, at a recognised Lying-in Hospital or Maternity.

Three months' Practical Pharmacy, in a recognised Clinical Hospital or a recognised School of Pharmacy, or a year in the Compounding Department of a Licentiate Apothecary or a Pharmaceutical Chemist.

Each Candidate, before receiving his Diploma, must produce evidence that he has attained the age of twenty-one years.

Licentiates of this Hall are entitled to enter as Candidates for the Fellowship of the Edinburgh Royal College of Surgeons.

EXAMINATIONS FOR THE DIPLOMA.

All information relative to the Examinations may be obtained from the Registrar of the Apothecaries' Hall, 40 Mary Street, Dublin.

DENTAL EDUCATION AND EXAMINATIONS IN IRELAND.

UNIVERSITY OF DUBLIN.

DEGREE AND LICENCE IN DENTAL SCIENCE.

The University of Dublin grants both a Degree and a Licence in Dental Science. To obtain the former, Candidates must have taken a Degree in Arts; the Licence is awarded to duly qualified persons who have passed the Public Entrance Examination of Trinity College, Dublin.

LICENCE IN DENTAL SCIENCE.

(*L. Dent. Sc., Univ. Dub.*)

Before passing the Entrance Examination in Trinity College or immediately after doing so, Students are advised to begin their three years' Course of instruction in *Dental Mechanics*, and to devote all their time during one year to this subject. Dental Mechanics may be learnt in the Mechanical Department of the

Dental Hospital, where a Fee of £100 is charged, or from a Registered Dentist, in which case the Fee charged is a matter of arrangement.

Having passed the Public Entrance Examination in Trinity College, Students should register themselves as Dental Students at the Registrar's Office in the Medical School, and commence the prescribed course of study, of which particulars may be obtained from the Registrar of the School of Physic in Ireland.

DEGREE IN DENTAL SCIENCE.

(M. Dent. Sc., Univ. Dub.)

The Course of study recommended in the case of Candidates for the Degree in Dental Science is the same as that for the Licence, with the addition of—

Pathology Lectures,	..	..	£2	2	0
Pathology, Practical,	..	..	2	2	0
Bacteriology,	..	..	3	3	0
			<hr/>		
			£7	7	0

which should be taken out in the fourth or fifth year.

Before presenting themselves for the Final Examination for the Degree, Candidates must—(1) have passed the Examination for the B.A. Degree ; (2) have attended satisfactorily the Courses indicated above ; and (3) must have had their names on the books either of the Medical School or of the Dental School, for a period of not less than five years. They must also have passed the Previous Dental Examination in all its parts, and have attained the age of twenty-one years.

The subjects for the Degree Examination are—

Medicine.

Surgery.

Pathology.

Bacteriology.

Dental Anatomy, Human and Comparative.

Dental Microscopy.

Dental Surgery and Pathology.

Dental Mechanics.

Orthodontia.

The fee for the Examination is £5.

Examinations will be held on Nov. 20, 1905; March 19, June 20, 1906. Notice must be given to the Registrar of the School of Physic not later than a week before the Examination begins.

The Board of Trinity College is willing to consider applications, on the part of qualified practitioners and others, for recognition of Courses taken previous to the establishment of the Degree and Licence, in case they proceed to complete the Course.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

DIPLOMA IN DENTAL SURGERY.

The Royal College of Surgeons in Ireland grants Diplomas in Dental Surgery under conditions of which the following is a synopsis:—

The Candidate must be twenty-one years of age before being admitted to the Final part of the Examination.

The Candidate must have passed three Examinations.

1. Preliminary (identical with the Medical Preliminary).
2. Primary Dental. Fee, £10 10s. (This Examination is much the same as the Second Conjoint Professional.)
3. Final Dental Examination. Fee, £10 10s. Candidates are examined in Dental Surgery and Pathology, and in Dental Mechanics, including the Metallurgy of the workshop.

Candidates are required to do gold fillings, and construct mechanical work in the presence of the Examiners.

The Certificates required may be divided into General and Special.

1. The General Certificates required are about the same as those required by the Medical Student for the Second Conjoint Professional Examination.

The Special Certificates may be subdivided into—

1. Dental Hospital. 2. Practical Mechanical Dentistry.
 1. Dental Hospital. Two years' attendance, with Lectures in Dental Surgery and Pathology and in Dental Mechanics. Fee, £28 7s.
 2. Practical Mechanical Dentistry. Three years' instruction from a Registered Dentist. The fee for this is variable, but may be set down at from £50 to £150.

Large reductions in the Special Certificates required are made in the cases of qualified Medical Practitioners.*

As regards Dental Hospital practice, full information is contained in the Calendar for 1905-06 of the School of Dentistry in connection with the Incorporated Dental Hospital of Ireland, Lincoln Place, Dublin. The Calendar may be obtained on application to the Dean, Dr. A. W. W. Baker.

* Fuller particulars can be obtained by application to the Registrar, Royal College of Surgeons, St. Stephen's Green, Dublin.

THE REGISTRATION OF NURSES: REPORT OF THE SELECT COMMITTEE.

THE Select Committee appointed to consider the expediency of providing for the Registration of Nurses have agreed to the following report : —

1. The Select Committee on the Registration of Nurses was appointed in June, 1904, and was re-appointed during the present Session of Parliament.

THE WITNESSES.

2. Your Committee have examined 34 witnesses, among whom are included members of the medical profession, matrons of hospitals, superintendents of nursing institutions, nurses whose experience has been gained abroad as well as nurses who carry on their occupation in this country, a representative of the male nurses, representatives of various institutions and public bodies, including the Civil Service, besides ladies and gentlemen who are not professionally employed but who have given much time and work to the management of hospitals and asylums, and to the study of nursing questions both in the centres of population and in rural districts.

3. Amidst many divergent views met with in this evidence there is a general opinion in favour of some change in the conditions under which nursing is carried on.

4. Your Committee have observed this tendency in the evidence of the medical profession and in that of the nurses themselves.

5. The evidence shows that a considerable improvement has taken place of late, both in the class of persons who undertake nursing and in the conditions under which they obtain their training and carry on their occupation.

6. It has been asserted in some quarters that registration is rendered requisite by reason of the amount of illegality, immorality, and scandal which at present continues undiscovered and unchecked. It is contended that registration would be an efficient instrument against these scandals, and would safeguard the public. In the judgment of your Committee, while

registration might prove a means towards checking some abuses, no evidence which has been brought forward substantiates a general charge of moral delinquency.

7. On the other hand, there is a general concurrence of opinion that in the interests of the nurses and of the public further improvement is both desirable and practicable; and your Committee consider that the desire for co-ordination of the various training schools, although not universal, is widespread.

8. Upon the question of what changes in the conditions of nursing are desirable strong opinions are held and vigorous expression has been given to them.

9. In these circumstances unanimity could not be looked for.

10. The principal suggestions laid before the Committee are :—

(a) Registration of individual nurses.

(b) Registration of training schools for nurses.

(c) Licensing of nursing homes, institutions, and societies which supply or employ nurses.

PROPOSED CENTRAL BODY

11. Your Committee are agreed that it is desirable that a Register of Nurses should be kept by a Central Body appointed by the State, and that while it is not desirable to prohibit unregistered persons from nursing for gain no person should be entitled to assume the designation of "Registered Nurse" whose name is not upon the Register.

12. They recommend that this Central Body should be set up by Act of Parliament, and that its constitution should be defined in the Act, as was done in the case of the Central Midwives Board.

13. The Central Body should consist of matrons, nurses, and representatives of the medical profession, of training schools for nurses, and of the public.

14. Your Committee consider it desirable that the number of representatives should be kept within reasonable limits; they suggest 11 as a convenient number, and recommend that it should never exceed 15.

15. Your Committee recommend that the Central Body should admit to the Register of Nurses such nurses as have had a training at a recognised training school for nurses for a period to be determined by such body, and have satisfied their training school, whose certificate they must hold, stating that they are

equipped with the knowledge and experience requisite for nursing, and that they are of good character.

16. They also recommend that the Central Body should decide what constitutes a recognised training school for nurses, taking into consideration the number of beds, the accommodation for probationers, the facilities afforded for learning, and the general standard and conduct of the examination; for this purpose the Central Body should have the power of inspection. Your Committee further recommend that the examination be held at and by the training school.

THE FEE AND THE TRAINING.

17. For the purpose of defraying the expenses of the Central Body a small registration fee should be charged. Your Committee consider that this fee should not exceed one guinea.

18. Your Committee have heard a large amount of evidence on the subject of the necessary period of training at a school. The great bulk of this evidence points to three years as the requisite period of training. They are themselves impressed with the advisability of such a period, but they recognise that a stereotyped rule might operate unfortunately. They therefore recommend that the minimum period should not be fixed by Act of Parliament, but should be left to the discretion of the Central Body.

19. There should be an annual publication of the Register of Nurses. For this purpose the Central Body should make provision for striking off the Register the names of those nurses who have died or who have ceased nursing, and also of those nurses who, in the opinion of the Central Body, have been guilty of serious misconduct in the discharge of their duty or of moral delinquency.

EXISTING NURSES.

20. With regard to existing nurses your Committee are of opinion that those who can produce evidence satisfactory to the Central Body, both as regards efficiency and character, should be placed upon the Register on payment of the registration fee.

21. The Committee are of opinion that it should be the duty of the Central Body at a date not later than four years after the passing of any Act for the Registration of Nurses to submit

a Report to the Privy Council on the advisability of instituting a separate Register of Nurses whose training is of a lower standard than that laid down for "Registered Nurses."

22. The claims for Registration of Mental or Asylum Nurses have been laid before your Committee. They are of opinion that a separate Register of "Registered Asylum Nurses" should be kept by the Central Body, to which should be admitted the names of nurses who have served for not less than three years (in not more than two Asylums), and have received the certificate of the Medico-Psychological Association, and can produce satisfactory certificates of good character.

NURSING HOMES.

23. An analogous but separate question has come before your Committee, namely, the treatment of Nursing Homes and Institutions. Nursing homes are deemed to include all homes and places conducted for profit where patients are taken in for treatment. By nursing institutions are meant those societies or bodies which supply nurses to the public.

24. The evidence laid before your Committee has led them to consider the licensing of such homes and institutions to be highly desirable. The licence should be issued by the county or county borough authority in whose area the home or institution is situated, and no such home or institution should receive the licence unless it is conducted in conformity with requirements to be laid down by that authority.

25. The county or county borough authority should be empowered to draft regulations to be approved by the Local Government Board, and to appoint inspectors who should have the right of entry and inspection.

26. It should be a condition of such licence that when a nurse employed in a nursing home or sent out by a nursing institution is not a "Registered Nurse" the fact shall be definitely stated.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by the EDITOR.

VITAL STATISTICS

For four weeks ending Saturday, September 9, 1905.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending September 9, 1905, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 17.3 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,959. The deaths registered in each of the four weeks ended Saturday, September 9, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality.

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Aug. 19	Aug. 26	Sept. 2	Sept. 9			Aug. 19	Aug. 26	Sept. 2	Sept. 9	
22 Town Districts	19.2	18.5	18.3	17.3	18.3	Lisburn -	31.8	18.2	27.3	13.6	22.7
Armagh -	20.6	6.9	20.6	13.7	15.5	Londonderry	21.1	12.4	23.6	19.8	19.2
Ballymena	9.6	23.9	9.6	38.3	20.3	Lurgan -	17.7	13.3	17.7	8.9	14.4
Belfast -	18.2	19.8	15.3	15.8	17.3	Newry -	25.2	16.8	25.2	33.6	25.2
Clonmel -	35.9	20.5	25.6	15.4	24.3	Newtownards	5.7	5.7	11.4	5.7	7.2
Cork -	21.9	15.1	19.9	16.4	18.3	Portadown -	15.5	20.7	-	15.5	12.9
Drogheda -	8.2	20.4	20.4	8.2	14.3	Queenstown	33.0	13.2	13.2	26.4	21.4
Dublin - (Reg. Area)	19.9	19.8	22.0	18.4	20.0	Sligo -	43.2	14.4	19.2	19.2	24.0
Dundalk -	4.0	31.9	19.9	19.9	18.9	Tralee -	5.3	15.9	-	26.4	12.9
Galway -	11.7	7.8	15.5	11.7	11.7	Waterford -	23.4	5.8	17.5	17.5	16.1
Kilkenny -	9.8	-	9.8	19.7	9.8	Wexford -	4.7	23.3	14.0	28.0	17.5
Limerick -	19.1	26.0	12.3	10.9	17.1						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, September 9, 1905, were equal to an annual rate of 2.0 per 1,000—the rates varying from 0.0 in eleven of the districts to 12.6 in Newry, the 8 deaths from all causes in that district including 3 from diarrhoeal diseases. Among the 109 deaths from all causes in Belfast are 2 from diphtheria, one from enteric fever, and 10 from diarrhoeal diseases.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended September 9 amounted to 247—125 boys and 122 girls; and the deaths to 143—83 males and 60 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 19.7 in every 1,000 of the population. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the area, the rate was 18.4 per 1,000. During the thirty-six weeks ending with Saturday, September 9, the death-rate averaged 22.8, and was 3.3 below the mean rate for the corresponding portions of the ten years 1895–1904.

The registered deaths (143) include one death from diphtheria, one death from *pyrexia* (origin uncertain), 4 deaths from enteric fever, and 12 deaths from diarrhoeal diseases, 11 of these being deaths of children under 5 years of age (weekly mean of earth temperature at 4 feet, 57.2°). In the 3 preceding weeks the deaths attributed to diarrhoeal diseases were 20, 25, and 19, and the deaths from enteric fever one, 2, and 2, respectively.

Broncho-pneumonia caused one death, and *pneumonia* (not defined) caused 2 deaths.

There was a total of 24 deaths from tuberculous disease, which include 4 deaths from tubercular phthisis, 8 deaths from *phthisis*, 5 deaths from tubercular meningitis, one death from *tabes mesenterica*, and 6 deaths from other forms of the disease. The totals

of deaths from all forms of tuberculous disease in the 3 preceding weekly periods were, respectively, 38, 20, and 27.

Three deaths were ascribed to carcinoma, and 3 deaths to cancer (undefined).

The deaths of 3 infants, prematurely born, were registered.

The deaths of 5 infants under one year of age were attributed to *convulsions*. There were 5 deaths from other diseases of the brain and nervous system.

Twenty-four deaths were caused by diseases of the heart and blood vessels, and 10 deaths were due to bronchitis.

The 3 deaths caused by accidental circumstances include the death of a child one year of age from scalds. One death from suicide was registered on the certificate of the Coroner.

In 6 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 4 infants under one year of age and the death of a person aged 67 years.

Fifty of the persons whose deaths were registered during the week were under 5 years of age (36 being infants under one year, of whom 9 were under one month old), and 37 were aged 60 years and upwards, including 19 persons aged 70 and upwards, of whom 4 were octogenarians.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious disease notified under the "Infectious Diseases (Notification) Act, 1899," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended September 9, 1905. and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Fever	Total
City of Dublin	Aug. 19	-	*	*	6	-	-	1	-	5	11	12	-	*	*	*	35
	Aug. 26	-	*	*	3	-	-	3	-	6	11	1	-	*	*	*	24
	Sept. 2	-	*	*	5	-	-	4	-	2	12	3	-	*	*	*	31
	Sept. 9	-	*	*	2	-	-	3	-	3	21	9	-	*	*	*	43
Rathmines and Rathgar Urban District	Aug. 19	-	*	*	1	-	-	2	-	-	1	-	-	*	*	*	4
	Aug. 26	-	*	*	-	-	-	2	-	-	-	-	-	*	*	*	2
	Sept. 2	-	*	*	-	-	-	1	-	1	-	-	-	*	*	*	3
	Sept. 9	-	*	*	-	1	-	1	-	-	1	-	-	*	*	*	3
Pembroke Urban District	Aug. 19	-	1	-	-	-	-	-	-	-	-	-	-	*	-	-	1
	Aug. 26	-	1	-	-	-	-	-	-	-	-	1	-	*	1	-	3
	Sept. 2	-	-	-	-	-	-	-	-	-	1	1	-	*	-	-	2
	Sept. 9	-	-	-	1	-	-	1	-	-	-	-	-	*	-	-	2
Blackrock Urban District	Aug. 19	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Aug. 26	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Sept. 2	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Sept. 9	-	*	*	-	-	-	-	-	-	1	-	-	*	*	*	1
Kingstown Urban District	Aug. 19	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Aug. 26	-	*	*	-	-	-	-	-	-	-	1	-	*	*	*	1
	Sept. 2	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Sept. 9	-	*	*	-	-	-	-	-	-	1	2	-	*	*	*	3
City of Belfast	Aug. 19	-	*	*	5	-	-	1	1	12	10	8	-	*	*	*	37
	Aug. 26	-	*	*	10	-	-	2	-	22	25	4	-	*	*	*	63
	Sept. 2	-	*	*	12	-	-	2	-	7	14	3	1	*	*	*	39
	Sept. 9	-	*	*	16	-	-	4	1	15	27	2	-	*	*	*	65

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended September 9, 1905, one case of measles was admitted to hospital, one was discharged, and 4 patients remained under treatment at its close.

Four cases of scarlet fever were admitted to hospital, 6 were discharged, and 23 cases remained under treatment at the close of the week. This number is exclusive of 16 convalescents who remained under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital.

One case of typhus was admitted to hospital during the week and remained under treatment at its close.

Five cases of diphtheria were admitted to hospital, one was discharged, and 20 patients remained under treatment at the close of the week.

Twenty-one cases of enteric fever were admitted to hospital, 4 were discharged, there were 3 deaths and 81 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 9 cases of pneumonia were admitted to hospital, 6 were discharged, one died, and 20 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended September 9, in 76 large English towns, including London (in which the rate was 15.9), was equal to an average annual death-rate of 16.1 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 14.0 per 1,000, the rate for Glasgow being 14.2, and for Edinburgh 13.5.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of August, 1905.

Mean Height of Barometer,	-	-	29.845 inches.
Maximal Height of Barometer (31st, at 9 a.m.),	30.368	„	
Minimal Height of Barometer (4th, at 11 a.m.),	29.019	„	
Mean Dry-bulb Temperature,	-	-	57.4°.
Mean Wet-bulb Temperature,	-	-	54.5°.
Mean Dew-point Temperature,	-	-	51.9°.
Mean Elastic force (Tension) of Aqueous Vapour,	.388	inch.	
Mean Humidity,	-	-	82.8 per cent.
Highest Temperature in Shade (on 16th),	-	70.0°	.
Lowest Temperature in Shade (on 31st),	-	46.0°	.
Lowest Temperature on Grass (Radiation), (31st)	41.0°		.
Mean Amount of Cloud,	-	-	64.1 per cent.
Rainfall (on 22 days),	-	-	7.019 inches.
Greatest Daily Rainfall (on 25th),	-	-	3.436 inches.
General Directions of Wind,	-	-	N.W., W.S.W.

Remarks.

August, 1905, may be described as a changeable, cool, and rainy month. It will be especially memorable for the record-breaking rainstorm which visited the east coast of Ireland, and in particular the Counties Dublin and Wicklow, on Friday, the 25th. In Dublin this remarkable rainstorm began shortly after 9 p.m. of the 24th and persisted for 34 hours, the resulting measurement in the rain-gauge being 3.949 inches at Fitzwilliam Square, 3.789 inches in

Trinity College, 4.330 inches at Leeson Park, 3.990 inches at Glasnevin Royal Botanic Gardens, and 3.725 inches at the Ordnance Survey Office, Phoenix Park. The following table of the rainfall measurements taken at 9 a.m. of Saturday, the 26th, for the previous 24 hours, may be looked on as historic from a meteorological point of view :—

Dublin :	Trinity College	-	-	-	3.300 inches
„	Fitzwilliam Square	-	-	-	3.436 „
„	Leeson Park	-	-	-	3.740 „
„	Leinster Road, Rathmines	-	-	-	3.459 „
„	Royal Botanic Gardens, Glasnevin	-	-	-	3.580 „
„	Ordnance Survey Office, Phoenix Park	-	-	-	3.350 „
Kingstown :	The Park Observatory	-	-	-	3.150 „
„	Board of Works Observatory	-	-	-	3.170 „
Killiney :	Cloneevin	-	-	-	3.060 „
Stillorgan :	White Cross	-	-	-	3.220 „
Dundrum :	Lynton	-	-	-	4.040 „
Bray :	Fassaroe	-	-	-	4.450 „
„	Rocky Valley, Great Sugar Loaf	-	-	-	5.500 „
Greystones :	Knockdolian	-	-	-	3.350 „
Newcastle :	Royal National Hospital	-	-	-	4.110 „
Malahide :	The Green	-	-	-	3.110 „
Balbriggan :	Ardgillan	-	-	-	3.120 „

From this list it would appear that the rainfall entered to the 25th exceeded 3 inches at all stations in the Counties Dublin and Wicklow, while it rose above 4 and even 5 inches at stations situated near the Dublin and Wicklow Mountains. It is worth noting that the wind was easterly and north-easterly during the downpour—that is, on shore along the coast-line of the drenched counties.

The duration of bright sunshine was estimated at 138 hours, or a daily average of 4.5 hours, compared with a twenty years' average of 162.7 hours, or 36 per cent. of its possible duration, recorded at the Ordnance Survey Office, Phoenix Park.

In Dublin the arithmetical mean temperature (58.9°) was below the average (59.7°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 57.4°. In the forty years ending with 1904, August was coldest in 1881 (M. T. = 57.0°), and warmest in 1899 (M. T. = 63.4°).

The mean height of the barometer was 29.845 inches, or 0.052 inch below the corrected average value for August—namely, 29.897 inches. The mercury rose to 30.368 inches at 9 a.m. of

the 31st, and fell to 29.019 inches at 11 a.m. of the 4th. The observed range of atmospheric pressure was, therefore, 1.349 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 57.4°. It was 4.9° below the value for July, 1905. Using the formula, *Mean Temp. = Min. + (Max. — Min. × .47)*, the mean temperature was 58.5°, or 0.8° below the average mean temperature for August, calculated in the same way, in the thirty years 1871–1900, inclusive (59.3°). The arithmetical mean of the maximal and minimal readings was 58.9°, compared with a thirty years' average of 59.7°. On the 16th, the thermometer in the screen rose to 70.0°—wind, E.; on the 31st the temperature fell to 46.0°—wind, N.N.W. The minimum on the grass was 41.0°, also on the 31st.

The rainfall was 7.019 inches on 22 days. The average rainfall for August in the thirty-five years 1866–1900, inclusive, was 3.040 inches, and the average number of rainy days was 17. The rainfall, therefore, was more than twice the average, while the rainy days were also much in excess. In 1900 the rainfall in August was very large—5.871 inches on 17 days; in 1889, also. 5.747 inches were registered on 22 days. On the other hand, in 1884, only .777 inch was measured on 8 days. In 1904, 2.903 inches fell on 18 days. August, 1905, establishes a record for rainfall in this month in Dublin.

High winds were noted on 8 days, and attained the force of a gale on 3 days—the 3rd, 18th and 19th. Temperature reached 70° in the screen on only one day, compared with 18 days in August, 1899, 6 in 1900, 7 in 1901, only one day in both 1902 and 1903 and 9 days in 1904. Thunder was heard on the 1st and 10th, and a thunderstorm occurred on the 9th. A solar halo was seen on the 24th. The Eclipse of the Sun (799 out of 1,000 parts) was indifferently seen in Dublin on the 30th.

The rainfall in Dublin during the eight months ending August 31st amounted to 18.041 inches on 131 days, compared with 16.808 inches on 135 days in 1904, 21.872 inches on 157 days in 1903. 18.456 inches on 133 days in 1902, 14.384 inches on 106 days in 1901, 23.480 inches on 146 days in 1900, 18.200 inches on 117 days in 1899, 16.516 inches on 124 days in 1898, 19.388 inches on 149 days in 1897, 14.464 inches on 120 days in 1896, 9.455 inches on 96 days during the same period in 1887, and a thirty-five years' average of 17.660 inches on 130 days.

At the Normal Climatological Station in Trinity College, Dublin, the mean height of the barometer was 29.840 inches, the range of atmospheric pressure being from 30.366 inches at 9 a.m. and 9 p.m. of the 31st to 29.053 inches at 9 a.m. of the 4th. The mean value of the readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 58.2°. The arithmetical mean of the daily maximal and minimal temperatures was 58.5°. The screened thermometers rose to 69.3° on the 6th, and fell to 46.0° on the 31st. On the 22nd the grass minimum was 35.9°. On the 6th the black bulb *in vacuo* rose to 130.6°. Rain fell on 20 days to the amount of 6.522 inches, the greatest fall in 24 hours being 3.300 inches on the 25th. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 121.9 hours, of which 9.6 hours occurred on the 14th and again on the 16th. In August, 1904, there were 183.75 hours of bright sunshine. The mean-earth temperatures were—at 1 ft., 59.9°; at 4 ft., 58.5°. The one-foot thermometer ranged between 61.8° on the 17th and 57.4° on the 26th. The four-feet thermometer ranged from 59.2° on the 3rd to 57.5° on the 30th.

Dr. Christopher Joynt, F.R.C.P.I., returns the rainfall at 21 Leeson Park as amounting to 7.650 inches, of which 3.740 inches fell on the 25th, .740 inch on the 3rd, .700 inch on the 2nd, and .590 inch on the 24th. The rainy days were 19.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, County Dublin, the rainfall was 9.35 inches on 21 days. The maximal fall in 24 hours was 4.04 inches, measured on the 25th. The corresponding figures for 1901 were 3.11 inches on 16 days, for 1902, 2.73 inches on 18 days, for 1903, 2.78 inches on 25 days, and for 1904, .98 inch on 20 days. The mean shade temperature was 59.1°, the range being from 70° on the 26th to 45° on the 31st. In August, 1901, the M. T. was 60.5°, in 1902, it was 58.7°, in 1903, 58.6°, and in 1904, 60.5°.

At White Cross, Stillorgan, Miss Muriel E. O'Sullivan measured 7.556 inches of rain on 20 days, the largest amount which fell in 24 hours being 3.220 inches on the 25th.

Mr. T. Bateman reports that the rainfall at the Green, Malahide, Co. Dublin, was 7.181 inches on 21 days, the greatest fall in 24 hours being 3.110 inches on the 24th. The mean shade temperature was 57.8°, the extremes being—highest, 70.0° on the 14th; lowest, 44.0° on the 31st.

Captain Edward Taylor, D.L., reports that the rainfall in

August at Ardgillan, Balbriggan, Co. Dublin, amounted to 6.89 inches on 22 days, the largest measurement on one day being 3.12 inches on the 25th. This was the greatest fall recorded at Ardgillan on any day of the 13 years, 1893–1905, inclusive, the next greatest having been 2.74 inches on November, 11, 1901. Rain began to fall at Ardgillan at 9 p.m. of the 24th, and continued till 5 a.m. of the 26th—a period of 32 hours during which 3.53 inches fell. This amount was exceeded during the rainstorm of November 11th and 12th, 1901, when over 4 inches of rain fell in 30 hours. It may be noticed that, without the fall on the 25th, the total rainfall for August would have been almost exactly equal to the average.

According to Mr. R. Cathcart Dobbs, J.P., at Knockdolian, Greystones, Co. Wicklow, the rainfall for August was 8.015 inches on 22 days, compared with 2.875 inches on 20 days in 1904, 2.870 inches on 27 days in 1903, 3.520 inches on 16 days in 1902, 3.625 inches on 15 days in 1901, 5.995 inches on 16 days in 1900, 2.640 inches on 11 days in 1899, 3.185 inches on 18 days in 1898, 6.195 inches on 27 days in 1897, and 1.245 inches on 14 days in 1896. The heaviest fall in 24 hours was 3.350 inches on the 25th. The total fall since January 1 amounts to 12.058 inches on 110 days, compared with 18.577 inches on 129 days in 1904, 23.100 inches on 134 days in 1903, 23.161 inches on 111 days in 1902, 19.685 inches on 100 days in 1901, 29.326 inches on 136 days in 1900, 25.630 inches on 120 days in 1899, 17.830 inches on 112 days in 1898, 25.945 inches on 143 days in 1897, and only 14.327 inches on 91 days in 1896.

The Rev. Arthur Wilson, M.A., returns the rainfall at the Rectory, Dunmanway, Co. Cork, at 7.530 inches on 18 days. The largest measurements in 24 hours were 1.80 inches on the 24th, and 1.77 inches on the 3rd, but 1.09 inches fell on the 2nd.

At Cloneevin, Killiney, Co. Dublin, Mr. Robert O'Brien Furlong, C.B., reports that the rainfall in August was 6.71 inches on 18 days, compared with a twenty years' (1885–1904) average of 3.131 inches on 16.9 days. On the 25th, 3.06 inches were measured. The month's rainfall is the highest recorded at Cloneevin, with one exception—July, 1896—when 6.72 inches fell on 22 days. Upwards of 6 inches was also recorded in October, 1894, when 6.46 inches fell on 18 days, and in August, 1900, when the fall was 6.06 inches on 17 days. The rainfall of the 25th (3.06 inches) is the greatest daily record at Cloneevin, the next highest being 2.81 inches on September 2.

1902, and 2.06 inches on November 23, 1898. Since January 1, 1905, 20.39 inches of rain have fallen on 122 days at this station.

According to Mr. W. Miller, the rainfall in Cork City was 6.77 inches, or 3.28 inches over the average, and the rainy days were 18. The greatest fall was 1.75 inches on the 24th. The mean temperature of the month was 55.5° , or 4.1° below the average. The thermometer rose to 70° on the 16th and fell to 42.5° on the 13th and 14th. The rainfall for 1905 up to August 31 was 26.7 inches on 131 days, compared with averages of 23.61 inches and 123 days respectively.

Dr. B. H. Steede reports that at the Royal National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was 8.642 inches on 18 days, compared with 4.084 inches on 14 days in 1902, 3.171 inches on 24 days in 1903, and 2.623 inches on 10 days in 1904. The maximal temperature in the shade was 67.0° on the 5th, the minimal shade temperature was 45.0° on the 22nd. The heaviest daily rainfall was 4.110 inches on the 25th. During the 12 hours from 9 a.m. to 9 p.m. on the 25th, 3.620 inches of rain fell. The rainfall from January 1 to August 31, inclusive, was 22.299 inches on 115 days, compared with 22.358 inches on 122 days in the first eight months of 1902, 27.026 inches on 154 days in that period of 1903, and 21.871 inches on 140 days in 1904.

At the Ordnance Survey Office, Phoenix Park, Dublin, rain fell on 24 days to the amount of 6.485 inches, the greatest measurement in 24 hours being 3.350 inches on the 25th. The total amount of sunshine was 124.4 hours, the most on one day being 11 hours on the 14th and 16th.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 58.8° , being 1.3° below the average for the month during 18 previous years (1873-83 and 1898-1904), the extremes being—highest, 69.2° on the 14th; lowest, 48.5° on the 24th and 31st. At Bournemouth, the mean was 62.0° , the extremes being—highest, 76° on the 3rd; lowest, 47° on the 24th. The mean daily range of temperature was 11° ; at Bournemouth it was 15.0° . The relative humidity was 77 per cent., being 2 per cent. above the average for the month during the previous 4 years. The rainfall amounted to 6.80 inches on 19 days, being 3.6 inches above the average for August during 15 previous years (1873-83 and 1901-04), and the absolute highest for August during these 15 years. As

much as 3.13 inches was measured in the 24 hours ending 9 a.m. on the 26th, the greatest rainfall for any 24 hours recorded at Kingstown, the next highest being that of September 2nd, 1902, when 2.83 inches fell. At Bournemouth the rainfall was 2.63 inches on 14 days. The duration of bright sunshine was 141.9 hours, being 28.4 hours below the average for the month during the previous 4 years, as compared with 124.4 hours at the Ordnance Office, Phoenix Park, 144.9 hours at Valentia, 149.0 hours at Birr Castle, 164.1 hours at Southport, and 194.3 hours at Hastings.

A CASE OF ABSCESS OF THE SPLEEN AFTER TYPHOID FEVER.

ABSCESS of the spleen after typhoid fever is a very rare complication, and very few cases are on record. A case of exceptional interest is recorded by Dr. Federmann, of Berlin, in the *Deutsche medicinische Wochenschrift*, No. 15, 1905, in which this condition occurred and was cured by operation. The patient was a labourer, 23 years of age, who was admitted into the Moabit Hospital for an attack of typhoid fever of moderate severity. On the eleventh day after the decline of the fever the patient developed a further febrile attack with leucocytosis. An exploratory puncture showed the presence of turbid purulent fluid in the left pleural cavity. About six centimetres of the ninth rib were removed subperiosteally, and 300 cubic centimetres of this purulent fluid were evacuated; the lower lobe of the lung was adherent to the diaphragm which bulged upwards to a considerable degree. Subphrenic suppuration was in consequence suspected, and on puncture thick brownish pus escaped. On incision below the diaphragm 500 cubic centimetres of stinking pus, containing masses of necrotic spleen tissue, were discharged, leaving a space, as large as two fists, with very thin walls, beyond which the stomach, the liver, and coils of gut could be distinctly felt. The abscess occupied practically the whole of the upper half of the spleen. The cavity was carefully cleaned out and packed with iodoform gauze. Convalescence was somewhat protracted, but three and a half months later the patient left the hospital, his wounds being completely healed. Since that time he has remained healthy, and is able to work. Dr. Federmann, in discussing the diagnosis of the condition, considers that the important features of the case were the evidence of fluid in the pleura and the leucocytosis. As is well known, uncomplicated typhoid fever produces a state of leucopenia, or a reduction in the number of leucocytes. In this case a leucocytosis of 14,000 per cubic millimetre occurred in the second week of the illness, subsequently increasing to 25,000. The surgical treatment of the condition offers a very fair chance of recovery, since in the 27 cases recorded in the literature there is a mortality of only 15 per cent.—*The Lancet*, July 8, 1905.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XV.—*Extra-Articular Tuberculosis of the Bones.*

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TUBERCULOSIS of the bones is met with under two very different anatomical forms: sometimes diffuse with the aspect of granulations, but more often limited in one or more foci. It is the latter form, seated near a joint in a long bone, that I will consider. The extreme frequency of this particular localisation is to be explained by the fact that tuberculosis involves the spongy tissue, preferably in those regions which are the most vascular—that is to say, the bulb of the bone and the epiphysis in children. In the adult the ends of the bones are still a seat of predilection for the process, because they are more exposed to traumatism than the diaphysis, such as pressure and traction produced by the functions of the neighbouring joint. I have no intention of giving a detailed description of tuberculous lesions of the bones, and I would simply recall that, from the commencement, the isolated or confluent tuberculous granulations set up

an intense reaction in the surrounding bony structures. In the immediate neighbourhood of the focus one observes rarefying osteitis accompanied by inflammation of the medullary tissue; beyond this, and especially underneath the periosteum, there is on the contrary a condensing osteitis, although the osseous neoformation never reaches the same marked degree that it ordinarily does in chronic osteomyelitis. I have little to say regarding the advanced forms of tuberculosis of the bone. The isolated tubercle burrows out a kind of cavity and becomes encysted, and thus a true, cold abscess of the bone is formed, with purulent and more or less thick contents and a tuberculogenous membrane. If, on the contrary, a tuberculous infiltration exists there is no abscess formation, because the products of the liquifying tubercles fill the meshes of the bony tissue, and this results in a necrosis of the territory involved by obliteration of the vessels. The sequestrum becomes isolated little by little, its shape often being that of a heart. It is enclosed in an irregular cavity, which is lined with fungosities.

What is more of interest is the evolution of intra-osseous tuberculous abscesses. These increase in size more or less quickly from their periphery, and finally attain the limits of the bone. It is quite true that they may also open into the medullary canal, but these cases do not concern the subject of this paper. Frequently an abscess situated in the end of a bone will invade the joint cartilage, ulcerating it, and then the process extends to the joint, thus creating a fungous osteo-arthritis. But very frequently also the abscess may reach the surface of the bone, invade the periosteum, and involve the surrounding cellular tissue. It is evident that the resulting ulceration of the bone may be on the level with a segment of the neighbouring articular synovial membrane, and this, by becoming infiltrated by the tuberculosis, results in the formation of an osteo-arthritis, while the synovial membrane of the tendons may become somewhat involved by extension of the process. These facts are well known, but we need recall only those where the

abscess, having reached the surface of the bone and periosteum, extends only to the cellular tissue.

The question arises why the extension should take place in one direction or another, and why a cold abscess, developing in an epiphysis, will extend towards the joint or towards the surface of the bone? All this we are absolutely ignorant of, and one could discuss the question of the degree of resistance offered by the cartilage or the periosteum to the tuberculosis as well as the anatomical arrangement of the ends of the bone, but no absolute conclusion could be drawn. All that can be said is that the variety of tuberculosis of the bone that we are now studying has points of predilection, as we shall see, but this does not mean that osteo-arthritis is much more infrequent in these particular points.

However it may be, an extra-articular abscess has no distinct anatomical character. It is, in the first place, a mass of fungous material, and then it changes into a puriform collection enclosed within its bony envelope, but, thanks to the fertility of the latter, the abscess increases and extends. On the contrary, this form of abscess presents certain peculiarities in its relations. It is usually seated upon one of the sides of the bone, and spreads out along this; occasionally it is quite far away from the joint, but very often it is in direct connection with it. In some instances it remains on the side of the epiphysis in which it has arisen, and does not extend beyond the inter-line; at other times it covers one entire side of the joint, hides it, and is separated from the synovial membrane by the articular capsule only, but under these circumstances it is always more developed in the end of the bone in which it took its starting point. The connections of the abscess with the soft parts have nothing special. It invades the cellular tissue and the aponeurosis, forces its way between the muscles and the tendons, or infiltrates them, or it may reach the skin, ulcerating it, and this results in the formation of one or more fistulæ.

There is, however, during this evolution a fact upon which I feel inclined to insist. It is known that when

in contact with the tuberculogenous membrane the tissues react and struggle for the production of fibrous tissue when it is the connective tissue system that is involved, while if the skeleton is the seat of the trouble a dense bony tissue is formed. This reaction may even result in a spontaneous complete or partial cure of the tuberculous focus, and Lannelongue believes that this mechanism explains the possible separation of a peri-articular cold abscess with the original focus in the bone by fibrous transformation and atrophy of the pedicle. It is at any rate certain that the manner of continuity between the lesion of the bone and the abscess of the soft parts is extremely variable. When the abscess is opened there may perhaps be no apparent communication, and, if the wall is scraped and the periosteum explored with a sound, it will be found intact, but, if one will search with extreme care, a small crack in the periosteum will oftentimes be discovered, and a minute orifice will thus be detected conducting directly into the bone lesion. In other cases the opening of the abscess will at once allow one to discover either denuded bone or an ulcerative process on its surface, and one is directly led into a cavity with or without a sequestrum or into a focus of caries. If I have somewhat insisted on these facts it is simply because they have a practical interest, and I shall show the necessity of not overlooking the lesion in the bone when one is dealing with an abscess of the soft parts. Such are the principal facts concerning para-articular abscess to which I am desirous of calling attention, and it now remains for me to say a few words relative to the general anatomic changes arising in the bone, the soft structures, and especially the joints.

At the diseased point the bone is always somewhat increased in size, but certainly less in reality than in appearance. In point of fact this local hypertrophy is due more to a thickening and induration of the soft parts in contact with the bone than to a hyperostosis, properly speaking. I shall refer again to this condition when studying the clinical aspect of the question.

The muscles in the neighbourhood are usually markedly atrophied, but contractions are not liable to occur. The lymphatic system is involved, and a regional adenopathy is frequent.

The disorders are either nil or insignificant in the neighbouring joint. They are, for that matter, little known anatomically, and all knowledge gained of their condition is obtained during operation. It is quite possible to find the joint free of any lesion, even when it is close to an extensive tuberculous focus of the epiphysis or of a large abscess of the soft structures. It is more common to find an articular collection, which, however, is usually moderate in amount; the liquid is serous, non-purulent, and perfectly susceptible of becoming spontaneously absorbed under the influence of the immobility necessitated by the treatment of the affection. There are no lesions of the synovial membrane or the capsule, but it should be pointed out that the focus in the bone is occasionally situated at the point of insertion of one of the ligaments of the joint, and this fact explains the pains produced by movements of the limb which distend the ligament. To sum up, the changes of a joint in the neighbourhood of a tuberculous focus in the epiphysis are both benign and minute during the entire formative period. As long as they do not become more accentuated these lesions are easily cured by simple immobilisation, but it goes without saying that, if the focus of tuberculosis is allowed to continue its evolution and extend, it will reach the synovial membrane and open into the joint through the cartilage, thus realising a white swelling, with fungous transformation of the synovial and a purulent collection, and will invade the other bone. It is not necessary to make any comments on the gravity of this lesion and the functional disorders which will result from it.

It is most important to consider for how long a joint may remain free from disease when an extra-articular tuberculous focus exists, and, although nothing precise can be said, with the aid of statistics or otherwise, I feel

prepared to say from personal observation that, at least in children, it may be for some time. Thus, considered in a general way, the transformation of an extra-articular tuberculosis of the bone into a frank osteo-arthritis may occur only after a considerable lapse of time, during which plenty of time is at the surgeon's disposal to treat and cure the primary affection.

Certain differences should be established according to the joints; the localisation of tuberculosis in certain epiphyses almost certainly results in a participation of the joint at once. In others, on the contrary, the integrity of the joint persists for a considerable length of time. In other words, an osteo-tuberculosis near a joint has certain points of predilection. All authorities appear to be quite in accord on this point. The following are three principal points of election—namely, the lower end of the radius, the lower end of the fibula, and the great trochanter. As has already been pointed out, it is useless to search for any explanation relative to this matter. In point of fact, the size of the end of the bone cannot be considered, nor the more or less considerable part that it takes in the joint, the degree of activity of its epiphysis, &c. There is a single point in common which perhaps permits one to class the lower end of the radius and fibula together in this point of view, because the cartilage of conjunction in both is markedly above the level of the joint. The great trochanter is frequently attacked by extra-articular tuberculosis, which may develop an external or posterior abscess, which makes it frequently very difficult to differentiate from coxalgia. It may be said that it is the only point of the upper end of the femur which can become invaded by tuberculosis without participation of the synovial membrane of the hip joint. The anatomical arrangement of the synovial membrane should be recalled to mind. It becomes reflected on the neck of the femur at the limit of its capsule, and envelops it everywhere, excepting behind in the neighbourhood of the trochanter. Now it is precisely this posterior aspect of the epiphysis which frequently

becomes the starting point of para-articular abscesses. The localisations at the upper end of the tibia and the lower end of the femur are far more frequent. They are met with, however; but a white swelling of the knee should be considered as usually following lesions of the neighbouring epiphyses.

The olecranon has been much discussed, and while Gangolphe is opposed to the idea that this bone may be involved without participation of the elbow joint, Ménard believes the contrary, and has reported a very striking example. From personal observation I am inclined to agree with the latter authority. It is usually on one of its sides, or on its posterior border, that the lesions in the olecranon become localised when they do not invade the joint.

Finally, I come to the lower epiphysis of the humerus and the head of the radius, which are extremely infrequently involved. As regards the former, Ménard says that he has never met with this lesion in the child, but the case reported by Bonnel was a perfectly typical tuberculosis of the epicondyle. I have been unable to find any instances in which the upper end of the humerus was involved, but it cannot be said that this localisation is impossible, although it must be extremely infrequent. For that matter there is not a single long bone that may not present tuberculosis in its extremity, and even the metacarpals have been involved.

From this study of the localisation of extra-articular tuberculosis of the bones one can simply conclude that certain joints become invaded more easily and earlier than others, but one should also recall to mind that they will always become involved if the extension of the lesions is not prevented by proper treatment. There is an anatomical fact which results from Ménard's cases—namely, the irritation of the cartilage of conjunction in children, quite capable of giving rise to a growth of the skeleton after a cure has taken place.

Tuberculosis evolutes in three more or less distinct stages, but always preserving this character of the

greatest importance upon which I cannot insist too strongly—namely, that the neighbouring joint is not involved, at least not seriously, at any epoch of this evolution. The commencement of the affection corresponds anatomically to the development of the tuberculous elements in the bony tissue of the epiphysis. Usually the process develops insidiously and quietly, its essential symptom being pain. It is extremely moderate, and can hardly be said to exist spontaneously—it is quite marked after fatigue, but soon quiets down by rest. The stories told by the patients are usually about the same. It is merely by chance that his attention is called to the painful spot, which he usually attributes to some slight traumatism. At all events, intense spontaneous pain is rarely complained of, accompanied by sudden distant radiations, which appear to characterise the lesions with invasion of the articular serosa, and which, according to Lannelongue, find their rational explanation from the presence of nerve ramifications of the synovial and ligaments. A local examination shows very little, but there is one thing which merits attention—namely, a very marked decrease in the functional power of the limb, and this partial impotence is not due to the pain or joint lesions, as one might be led to suppose. In point of fact it is very easy to make the diseased limb go through all its movements without provoking the slightest pain, and I believe that muscular atrophy should be considered as the first sign of tuberculosis of the epiphyses. Examination of the diseased part will always show the presence of a fixed and very precise painful spot, always the same and exactly corresponding to the focus of disease. The sensitiveness awakened by even moderate pressure is either dull or quite acute, while palpation of the neighbouring parts is absolutely painless.

The general condition of the patient varies extremely from one case to another. Frequently subjects having a tuberculous lesion of a bone present the group of symptoms which formerly were looked upon as belonging to scrofula, and that this diathesis exists there is no doubt

in my mind, and I cannot too strongly uphold the teachings of Sir Dyce Duckworth when he says that there is a strumous diathesis, and that those born with it are predisposed to tuberculous lesions, although with care and proper hygiene they may never become victims to the disease.

These patients have a flushed face, thick lips, and the tissues are, so to speak, infiltrated and puffy. Here and there one will find old cicatrices of fistulous tracts, more especially in the cervical region. The lymphatic system is hypertrophied. There also may exist other foci in the bones with fistulæ undergoing evolution. At other times the lesion is primary, and the patient is attacked in the midst of an apparently flourishing health, and in these cases there is no fever, the appetite is good, and the general condition perfect.

Between the initial period, during which it is most infrequent for the patient to consult the surgeon, because he pays little attention to a disturbance which in appearance is so mild, and the period which is characterised by the formation of a distinct tumefaction, there exists a more or less lengthy period of time, during which the lesion, which is still deeply seated, extends. Pain becomes more acute and superficial, so to speak, although it retains the same characters. Finally the tumefaction of the bone appears, but it is still limited and hard. But from this time on there is a symptom which can make its appearance. I refer to the involvement of the lymphatics of the region, which I will discuss fully later on.

In the second stage of the disease the pain becomes constant. It is spontaneous, and increases when the limb is moved. One must, however, make a few remarks relative to this. A superficial examination is sufficient to discover the true cause of the increase of pain during movements, and in all cases that I have seen I have always been able to produce extensive movements of the limb without increasing the pain, and I have noted that the movement which is the cause of pain was always the same in a given case. This fact has also been noted by

Ménard, who believes that the pain is due to the lesions of the region. I believe that the limitation of movement is to be explained by the pain caused by the contraction of the muscles which take their insertion in the immediate neighbourhood of the diseased bone, and that no lesion of the joint need necessarily exist. Muscular atrophy is very appreciable, not merely by measurements but from simple inspection alone, and from this there ensues a more or less considerable functional weakness. The tributary glands of the lymphatics coming from the region of the disease are frequently enlarged, and are easily detected by palpation, but it should be remarked that lymphatic involvement is less frequent than in those cases where the synovial membrane has become involved. Locally a tumefaction will be found, but there is not a hyperostosis, properly speaking. The swelling is entirely confined to the soft parts, and radiography shows this perfectly. The tumefaction, which is perfectly circumscribed and hard in the beginning, shows a tendency to extend. Its contours become less distinct, and, at the same time, it softens down. To the exploring finger it gives a pasty feel, and later on in the process it softens down in the centre and becomes fluctuating. Palpation is usually painful, at least at the borders, so much so that it is occasionally quite hard to exactly determine the extent of the focus of disease, and at the first examination one might be led to believe that the lesion is more extensive than it is in reality. Generally speaking, it is quite easy, if one persists in the examination, to recognise what part really belongs to the bone itself. Pressure will cause an acute and persistent pain; the neighbouring joint is usually free from disease, its synovial is not distended by liquid, and no thickening can be felt in the *culs-de-sac*. Friction of the joint surfaces against each other is painless.

Although the knee-joint should be considered particularly predisposed to a rapid involvement, most cases of extra-articular tuberculosis of the bone may be present for a considerable length of time entirely outside of the

joint. It has not been positively demonstrated that these arthritides, which are extremely slight, rapidly disappearing under treatment, are of a tuberculous nature. Ollier believed that the involvement of a joint generally took place slowly, and that it was usually preceded by an *arthrite de voisinage*. In point of fact, the results so far obtained would seem to uphold this hypothesis.

In those cases where the disease develops in a defective soil, and one already undermined by other morbid manifestations, the patient's general condition will naturally be poor, but otherwise his health will be found excellent, in spite of the evolution of the local lesions. Many authorities have upheld that apyrexia is usual during the evolution of the abscess, but, if care be taken, a rise in the general temperature of a few tenths of a degree will be detected at some part of the day. The end of the second period culminates in suppuration of the fungous focus. The mass softens and becomes fluctuating, while the skin, which has been intact and normal in colour, changes its aspect, becoming tense and shiny. It first shows a general redness, which darkens and takes on a violet hue. The integuments become softened over certain areas, and finally an ulcerative process takes place, giving issue to the pus, which has all the well-known characters of the tuberculous type, being liquid, serous, and containing yellow grumous masses, small bits of bone, and only a few or no bacilli.

The third period is reached when the abscess is opened, but it is far from being the end of the process. The pus amounts to nothing, but the wall of the abscess is everything, and remains quite as virulent after the opening of the pocket as before. The amount of pus eliminated, discharged in considerable amount during the first few days, decreases little by little, although retaining its characters, and finally fistulæ are formed. These have a narrow orifice with undermined borders, and fungous granulation tissue is seen. The orifice and the tract should always be carefully explored, but I cannot insist too strongly upon the absolute aseptic technique which

should be followed when doing this, because otherwise a serious secondary infection of the focus is an easy matter, and will result disastrously. The location of the orifice gives no clue as to the probable seat of the lesion in the bone, and one should always be guided by the data furnished by clinical examination. Sometimes the sound will at once come down upon the bone, which is denuded, but at other times it will easily enter a soft, friable, crepitating substance, which gives the sensation of moist sugar. At other times it will come in contact with a hard substance, which is moveable, and then one is dealing with the sequestrum. However, things may be entirely different, and unfortunately only too often an examination with the sound will give no indication whatsoever as to the starting point of the abscess, and this is occasionally a difficult matter to find during the operation, even when the abscess cavity has been freely opened up.

The duration of each of the three periods of evolution of tuberculosis of the bone is essentially variable. The disease may get well, even spontaneously, in any one of its stages, but this cure is more especially observed in young subjects, and then the lesion is primary and a purely local one. The happy outcome, before the formation of an abscess has taken place, is certainly very infrequent, and one should always remember that the supposed cure may be merely apparent and not real. The focus having become encysted may remain silent for a long time, and then some day, after a traumatism or an infectious disease, it will light up. This form of local recurrence has been described quite properly under the term of prolonged or relapsing tuberculous osteomyelitis. However, speaking in a general way, an abscess forms, and the fistulæ to which it gives rise are nearly always the ultimate outcome of the process. With it come numerous complications which are special to all varieties of tuberculous lesions with fistulæ, regarding which, consequently, I will not insist.

The fistulæ are not long in becoming secondarily infected, no matter how much care may be taken in the

dressings, and from this fact inflammatory attacks, with ordinary frank pus, fever, progressive loss of flesh, take place, the condition in no way preventing the tuberculous elements from undergoing their own evolution and endangering the general health. Distant lesions, such as meningitis, pleurisy, chronic peritonitis, pulmonary tuberculosis, only too frequently complicate the bone lesions at an advanced period of their evolution. But beside these complications, which belong to all old local tuberculous processes, I would especially insist upon one which particularly interests us here—namely, the possible extension of the disease to the neighbouring joint, resulting in the secondary development of a white swelling. This involvement may take place either by destruction of the walls of the primary cavity in the bone, followed by an irruption of the tuberculous products into the synovial cavity after ulceration of the diarthrodial cartilage, or, on the other hand, it may take place in the soft structures, the tuberculogenous zone progressively changing the texture of the fibro-synovial structures from without inward. Clinically it is not possible to foresee this serious complication, but I have already pointed out that certain anatomical conditions exist which more especially expose certain joints to an early contamination, and for this reason it is indicated to act quickly under these circumstances.

The prognosis of tuberculosis of the bones is serious, especially when in the neighbourhood of a joint, and, like any other tuberculous lesion, the entire organism is menaced by it. And still more it is a constant danger for the joint. By a free and early treatment it is relatively easy to become master of this localised focus; but it is infinitely less easy to kill a tuberculosis which has become localised in a joint, and if one obtains a cure in the latter case it is accomplished only by a mutilation which could have otherwise been avoided if the disease had been attacked earlier in its evolution. From this it naturally follows that an early and an as exact diagnosis as possible is of the highest importance.

Foci of extra-articular tuberculous osteitis are frequently associated with other manifestations of the same nature in the same subject. These patients are usually thoroughly tuberculous, or at least they are what were formerly called scrofulous, and which to-day we term strumous. Under these circumstances the diagnosis presents little or no difficulty, and it becomes still more certain when, beside the functional and painful symptoms of the beginning of the process, the development of a tumefaction makes its appearance, which, in the first place, is hard and localised, and later becomes pasty and diffused, and finally fluctuating. Under these circumstances it seems to me that every effort should be made to ascertain whether the neighbouring joint is involved or not; in other words, whether one is dealing with a purely extra-articular tuberculosis of the bone or a frank osteo-arthritis.

I have already sufficiently insisted upon the clinical characters of these foci near the joints, so that it will be now an easy matter to show their individualities.

A true osteo-arthritis from the start gives rise to rather sharp pain, which frequently takes on the character of neuralgia, with shooting pains arising in the knee or heel in cases of coxalgia, while in Pott's disease they are complained of in the epigastrium. Functional impotency is complete in a very short time, the movements become limited, but in these cases this is due to the pain produced by the friction of the surfaces of the diseased bones. The defensive contracture is an early symptom which is usually wanting when the foci of disease are extra-articular. Involvement of the lymphatics of the region is usual. Finally, at a more advanced period, the vicious attitudes, the serious changes of the synovial membrane, which is thickened and distended by liquid and fungous masses, render the diagnosis absolutely certain. There are, however, cases which give rise to considerable hesitation as to their true nature. During the evolution of an old extra-articular lesion one may observe the development of a slight arthritis in the neighbouring joint, so

it is readily understood how difficult it would be to make a diagnosis for any one who had not observed the development of the primary lesions, and this difficulty is so real that Albert has not hesitated to propose awaiting the ultimate evolution of the lesions in order to settle the diagnosis.

The signification of the signs noted in and about the joint appear to me quite impossible to describe, but personally I consider these slight secondary arthritides as merely arthritides of neighbourhood, because they get well quickly and easily, but I offer this only as an hypothesis. At any rate, these are not instances of true osteo-arthritis, and it is in reality the extra-articular osteitis that should be more particularly considered under the circumstances. What is true for typical osteo-arthritis is also so for the so-called atypical forms, such as the dry or partial intra-articular varieties. These can be differentiated from a pure extra-articular osteitis by the fact that from the very beginning of their evolution the articular symptoms dominate the morbid scene.

When extra-articular tuberculous osteitis is the primary manifestation of the disease in a subject free from all other tuberculous manifestations it presents considerable diagnostic difficulty. At the commencement, when pain only is present, many hypotheses are possible. In the child the epiphyses are particularly exposed to this localisation, so that one should above all think of tuberculosis when a fixed and tenacious pain is distinctly found at one point; and let me say right here that the so-called "growing pains" should always be looked upon with the utmost suspicion. Syphilis of the bones during the secondary period may give rise to pain, but this is totally different in its seat and character from that produced by tuberculosis of the bone. In syphilis the pain is nocturnal, and is more apt to be seated in the body of the bone than at its ends. When tumefaction is present it is hard in the beginning and incorporated with the bone, and it might be mistaken for a hyperostosis, and thus lead to an error in diagnosis. In doubtful cases radiography is an excellent means of controlling the situation, because

it will distinctly show that there is no increase in the size of the bone, and that the tumefaction is quite independent. Osteo-tuberculosis presenting a tumefaction which cannot be separated from the bone will be more likely to be mistaken for osteomyelitis. The acute infectious types have such a startling appearance that the error is quite possible, but the same cannot be said of the sub-acute or chronic forms, or in the concealed types. However, the differential diagnosis does not usually present any very great difficulty.

The seat of the lesions is extra-articular, the pain is located at this point, it is extremely sharp, and in certain cases the patients feel as if the bone was being strangulated or crushed. A true hyperostosis, either tardy or occurring at once, exists, the bone is increased in size, although not deformed. Fever will almost always be present, but it is capricious, and should be watched daily for a fortnight at least. The latter sign is, however, far from having an absolute value, and instances of chronic bipolar osteomyelitis, with enormous hyperostosis which has been taken for a sarcoma, even when the specimen was examined, underwent their evolution with absolute apyrexia. If fistulæ exist in the skin the differentiation between this disease and tuberculosis of the bone is still easier, because the fistulæ give exit to a thick and well-mixed pus, containing the pathogenic bacteria, usually the staphylococcus.

Osteo-sarcoma usually arises in the epiphyses, but it presents symptoms which are sufficiently distinct to diagnosticate it. It is a bony tumour deforming the bone irregularly; if, in the beginning, it does not attack the neighbouring joint it is not long in altering the bony surfaces. The malignant growth may soften down in certain points, become fluctuating, and lead one to believe that a cold abscess is present which may be incised. But these difficult cases are of extreme rarity, and in a large majority an erroneous diagnosis will not be made because a tuberculosis of the bone complicated with an abscess rarely presents any similarity to malignant disease.

Syphilitic gummous osteomyelitis is an infrequent condition. The lesion usually develops in the end of the diaphysis, the bone increases in size, but there is no suppuration. Before operating it is not possible to diagnosticate tumours produced by parasites when seated in the midst of a bone—as, for example, a hydatid cyst or actinomycosis—and I believe also that it would be using very little clinical good sense should one wait for developments.

A simple general treatment has occasionally been sufficient to cure foci of tuberculosis in the bone, but I believe, nevertheless, that in the large majority of cases it would be most dangerous to merely resort to this simple practice. However, as it is always well to surround oneself with every security possible in conducting a treatment which of necessity is more or less long, I would advise above all to place the diseased organism in such hygienic conditions that it may advantageously struggle against the infection and help repair. Consequently, one should prescribe when possible absolute rest, life in the open in the country, or preferably by the sea, a substantial and well-regulated diet, cod-liver oil, arsenic and lactophosphate of lime, &c.

The local treatment is of the greatest importance, and the ideal one would be to cut down upon the bone during the very early period of the infection, when clinically the only symptom pointing to trouble is fixed, localised pain. Unfortunately it is impossible in practice to realise such conditions, because in the first place it must be admitted that the diagnosis can rarely be sure and precise at this time, above all when there is no other manifestation of tuberculosis. And still more it would be very difficult to make a patient accept an operation for an affection which appears to him quite insignificant, and which gives rise outwardly to no alarming symptom. For this reason one will usually be obliged to merely advise absolute rest, and, if necessary, to immobilise the diseased limb, and possibly apply some local revulsion, all the time attentively watching the progress of the lesion.

In the larger number of cases the patients do not come

under observation until a distinct tumefaction has become evident; in other words, when an abscess is already forming, and under these circumstances a local treatment becomes obligatory. Several therapeutic means may be employed, some of which are intended to produce a continuous and slow destruction of the infectious elements, the others for the immediate radical destruction of the diseased focus. These we will rapidly pass in review. Simple puncture of the abscess, followed by injections of camphorated naphthol, a solution of iodoform in ether, and so forth, have, when continued for a sufficiently long time, given good results. This treatment has resulted in the cure of the focus in the bone by arresting the progress of the tuberculosis, but in truth one should not count too much on the efficaciousness of this treatment when the bone is involved, and only too often it has not prevented the spontaneous opening of the abscess with fistulous formation.

The sclerogenous method merits more consideration, and as its originator, Lannelongue, has intended, its end is the transformation of the tuberculous tissues. It endeavours to reach them, without directly acting upon the neoplasm, by concentrating its effects around it and on the sources of its nutrition. For this purpose one uses a solution of chloride of zinc at the strength of 10 per cent., rarely as weak as 5 per cent. An ordinary hypodermic syringe is used which is carefully rendered aseptic. The number of injections will vary with the extent of the abscess, three or four drops of the liquid being injected at each point. The needle should be pushed through at the periphery of the fungous focus, and forced deeply into the periosteum. If the liquid should flow out of the soft parts it may lead to a necrobiotic process. The injections should be resorted to once in three weeks at least.

The happy results obtained are certain. The injections are always painful, and frequently necessitate general narcosis. They give rise to considerable swelling, with reddening of the skin, collateral circulation, and increase of the local temperature.

I must, however, say that the treatment is so painful in many instances that the patients refuse to undergo it after it has been tried two or three times, and then again I believe that one must understand this treatment thoroughly, especially when it is necessary to inject the caustic deeply into the tissue, as in the hip-joint for instance. Then, too, the injection may not attain the desired point, and being deposited in the soft structures it gives rise to most unfortunate accidents. The liquid when badly directed in œdematous tissues, which hide the deep bony projections and change the anatomical relationships, may wound the sheath of a tendon, a nerve trunk, or a vessel, and thus bring about a true disaster. I know of a case of serious paralysis of the radial nerve following an injection of chloride of zinc in a case of arthritis of the elbow.

To sum up, I believe this method is an excellent one, especially when one is dealing with extensive fungous arthritis, because when it does not cure the lesion it at least has a happy influence on the tissues, and so to speak cleans them up and prepares them for a more extensive surgical operation. But in the case which we are considering, where it is necessary to suppress a menacing and invading focus of tuberculosis as quickly as possible, I am decidedly partisan of the operative method which I will now take up. To my mind the indications for operation are absolute, because the existing lesions have no tendency to get well spontaneously, and if they are allowed to continue their evolution the neighbouring joint will inevitably become invaded by the tuberculous infection.

As to the contra-indications, they practically are all to be found in the general condition of the patient. One would not naturally operate on a subject already cachectic, suffering from an advanced pulmonary tuberculosis, or any other visceral manifestation of the disease, or when patients present symptoms of visceral degeneration resulting from a long-continued suppurative process. In these subjects the progress of the lesions may be limited by the injection method, while at the

same time their general health is attended to by a proper treatment. The multiplicity of the localisations is not a contra-indication when no serious visceral change exists.

The open method seems consequently to my mind the one of choice, because it alone can result in a durable cure. It cannot be a question here of resection or arthrectomy, and all efforts should be directed to avoid the neighbouring joint which is healthy, but nevertheless the operation should be as extensive as possible. When an abscess exists without fistula, and the joint is absolutely healthy, the abscess should be freely opened up, the incision extending considerably beyond the presumed focus in the bone. The walls of the abscess should then be resected as far as possible, and the remainder carefully curetted. The fungosities should be followed up with care, often as far as the surface of the fibro-synovial layer which they cover over or may even involve without perforating them, on the aponeurosis of insertion of the muscles, and in the cellular interstices of the muscles themselves. Many failures observed after an operation are due to the fact that the focus in the bone has not been looked for sufficiently, and, in truth, it is not always an easy matter to find the small fungous orifice leading down on to the diseased bone, while the latter is far from always presenting a denuded condition rendering it easily recognisable. Consequently, rather than to expose oneself to an unsuccessful operation resulting from an incomplete intervention, I believe that in doubtful cases one should never hesitate to cut through the soft parts down upon the bone, being guided by the exact site of the initial painful point discovered clinically when examining the patient.

When the focus in the bone has been found it should be carefully chiselled out far beyond its limits, until one finds healthy bone everywhere. The cavity should next be cauterised with a 5 per cent. solution of chloride of zinc, carefully avoiding any structures which might suffer from its contact. The cavity in the bone is then packed with iodoform gauze, and should be allowed to remain

freely accessible, the rest of the wound being brought together by several silk-worm sutures. The limb should then be immobilised, and the proper dressings applied over all.

In cases of old fistula, with or without slight arthritis, the conduct to be followed is the same. The existing arthritis is far from being a contra-indication. In making the incision one should follow the indications furnished by the fistula or fistulæ, as well as by the direction taken by the probe. It should be free in order to expose the lesions, which are often very extensive, far more so than one generally supposes. The fistulous tracts should be excised, the fungous foci and their diverticula should be thoroughly scraped, the focus in the bone chiselled out or curetted, and the sequestra removed. The cavity in the bone, which is frequently very considerable, burrowing into the structures of the epiphysis, should be carefully explored so as to leave no suspicious tissue behind. The operation is finished as already indicated—namely, cauterisation with chloride of zinc solution and packing with iodoform gauze. However, in the cases we are now considering the wound should be left freely open, and simply packed, because the old fistulous tracts are usually secondarily infected. The arthritis should be treated by absolute immobilisation in a plaster cast, care being taken to place the limb in the proper position.

The results are usually simple and perfect if the operation has been sufficiently extensive. The pain rapidly disappears, while cicatrisation takes place slowly, yet thoroughly, under the influence of the dressings, which should be changed as rarely as possible, and in simple cases the limb will recover an absolute integrity of function. In the other cases, which are more extensive and of longer duration, some stiffness may remain for a certain time after the operation, but the joint lesions found will disappear little by little, and finally complete recovery takes place.

ART. XVI.—*The Chemistry and Pharmacy of the Leaves of Viola Odorata.*^a By H. WIPPELL GADD, F.C.S.

VIOLET leaves, as a remedy for various morbid conditions, have been recommended since the days of James I., and of late years attention has been devoted to them as a remedy for cancerous growths. The evidence of their value for such purposes has, however, been so inconclusive that one took but little interest in the matter, until in March last particulars of a case of "An apparent cure of a presumably malignant growth by the use of violet leaves" appeared in the *Lancet*.

The medical man who published the case was so much impressed by it that he desired to make clinical experiments with the leaves. It was ascertained that the leaves used were those of a cultivated species of violets, known to gardeners as the "Princess of Wales." The experiments hereafter described were all made with this species.

Botanists differ as to its exact systematic name—the authorities at Kew stating that it is a selected form of *Viola odorata*. But Mr. E. M. Holmes differs from this conclusion, as its stalk and leaves are hairy, and he thinks it is a hybrid.

I submit fresh and dried specimens of the plant, unfortunately collected after the flowering was over, in order that those learned in such matters may tear them, and, if necessary, each other, to pieces at their leisure.

For clinical purposes a handful of leaves (about forty, weighing about three and a quarter ounces) is infused in a pint of boiling water, the resultant product being taken internally, and applied externally, as a fomentation.

Experiments and observations have been made with this infusion during the last few months, the results of which will doubtless be published in due course.

In the *Lancet* of April 22nd, 1905, a series of experiments were described, founded on the work of Mandelin, published in 1883. He found that the *Viola tricolor*, var. *arvensis*, contained a glucoside having the composition

^a Read at the British Pharmaceutical Conference at Brighton, July, 1905.

and properties of quercitrin, which he named "Viola quercitrin."

He obtained this glucoside by exhausting the fresh plant with warm alcohol, removing the alcohol by distillation, and treating the residue with warm distilled water. He found on boiling with dilute mineral acid the glucoside decomposed, forming quercetin and a fermentable sugar. He also detected the presence of salicylic acid in minute quantities, both in the leaves of *V. tricolor*, var. *arvensis*, and those of the *V. odorata*. In the latter case, however, the acid was isolated only after the leaves had been boiled with dilute hydrochloric acid.

As it seemed probable that the glucoside, or some product of its hydrolysis, might be the active ingredient of the leaves, a solution was prepared in the following way:—

The fresh leaves were taken and boiled under a reflux condenser with rectified spirit for two hours. The greater portion of the spirit was then removed by distillation, and the residue evaporated until a sticky, treacle-like mass was obtained. This was treated with water, and the solution diluted sufficiently, so that one fluid part of the finished product should represent one part by weight of the fresh leaves. This solution reduces Fehling's solution, but more freely after being boiled with dilute mineral acid.

The amount of glucoside present was estimated in this way:—

The precipitated cuprous oxide was collected, washed with water, alcohol and ether, ignited, and weighed as cupric oxide. The result showed the presence of 1.036 per cent. of glucose, equal to 3.1 per cent. glucoside, reckoned as quercetin.

The solution was shaken in a separator with ether, the ether was evaporated, and the residue treated with hot water, and the aqueous solution tested for salicylic acid with a negative result.

A more exhaustive and systematic examination of the leaves was next started. Their strong, peculiar, and persistent odour suggested the presence of a volatile oil. On

heating the fresh leaves in a still, however, no distillate was obtained under 100° C. A liquid, having a pleasant odour, distilled over at the temperature of a brine bath. No oil separated from this. Water was then added to the contents of the still, and the mixture heated over a glycerine bath. A distillate having an unpleasant odour resulted, but no oil separated from this.

It was, therefore, concluded that the leaves, dried at a low temperature, would not suffer any loss save that of moisture.

A quantity of leaves (about 1,000) were exposed in a hot room for four or five days, the temperature never exceeding 50° C. At the end of that time they were sufficiently dried to be powdered, the dried powdered product weighing twenty per cent. (20 per cent.) of the weight of the fresh leaves.

This dry powder—a sample of which is shown—is a convenient form in which to keep the leaves. It might be administered in cachets, or a fresh infusion made from it, or the glucosidal solution described above. Twenty-five grammes of this powder were taken and exhausted in a Soxhlet tube with a purified petroleum spirit, boiling under 80° C. The spirit was removed by means of a current of air. The residue, which had the consistence of a soft extract, was equal in weight to two and a half per cent. of the weight of the dried leaves taken. It is of an oily nature, free from smell, lighter than water, insoluble in water, soluble in alkalies. Shaken with dilute acid and filtered, the filtrate gave no definite reaction with alkaloidal reagents. On standing, some minute tabular crystals were seen on the surface of the oily mass.

The leaves which had been thus exhausted with petroleum spirit were then treated in a Soxhlet tube with boiling alcohol (absolute) until all the colouring matter was extracted. The alcoholic solution gave no reaction with Fehling's solution until it had been boiled with dilute mineral acid. The alcoholic solution was evaporated over a water bath, and the residue had a slightly granular appearance. It rapidly took up moisture, even when kept in a desiccator over chloride of calcium, and attempts to

obtain crystals by evaporating *in vacuo* over sulphuric acid failed. The residue was then treated with water. The insoluble portion was shaken with dilute sulphuric acid, and filtered. No indication of the presence of an alkaloid could be obtained in the filtrate. The aqueous solution was evaporated over a water bath, and left an intensely sweet, treacle-like residue. No crystals could be obtained from this residue *in vacuo* over sulphuric acid. The exhausted marc in the Soxhlet tube consisted chiefly of fibrous matter and starch.

From the above experiments it would seem that any activity violet leaves possess is due either to the glucoside, the products of its decomposition, or the natural ferment associated with it.

In the present state of our ignorance it is better to use for clinical experiments the drug, the whole drug, and nothing but the drug.

"Which would you rather have," asked a school inspector, "half an orange or eight-sixteenths of one?" "Half," was the prompt reply. "Why?" said the inspector, scenting an imperfect knowledge of fractions. "Because in getting the sixteenths you lose so much juice."

In dissecting and concentrating, even in purifying, we may destroy the subtle entity with which Nature works her wonders.

I have to thank Dr. William Gordon, Physician to the Devon and Exeter Hospital, for suggestions and interest from a medical point of view; Mr. F. Southerden, B.Sc., for help on the chemical side; and my pupil, Mr. W. J. H. Clarke, who has done much of the practical work.

A NEW PREPARATION OF FERROUS SULPHATE.

IN the course of some laboratory notes submitted to the British Pharmaceutical Conference at Brighton, Mr. Sydney C. Gadd described a method by which a preparation can be made containing 60 per cent. of ferrous carbonate. This is practically a concentrated Blaud's pill, three times the strength of the original article. We think many of our readers will welcome the introduction of an active preparation of iron of which it is not necessary to take such enormous doses as it is customary to prescribe of Blaud's pills.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Hand-book of Intestinal Surgery. By LEONARD A. BIDWELL, F.R.C.S.; Surgeon, West London Hospital: Lecturer on Intestinal Surgery, and Dean of the Post-Graduate College; Consulting Surgeon to the Blackheath and Charlton and Diss Hospitals. London: Baillière, Tindall & Cox. 1905. Pp. xi + 167.

THE little book we have just read is evidently the outcome of Mr. Bidwell's lectures at the Post-Graduate College. It gives, as the author's aim was, a short description of the commoner intestinal sutures. The illustrations considerably enhance the value of the book. There are, however, a few points to which we should like to draw attention in passing. On page 4 we are informed: "The fixed duodenum should not be united to the movable stomach." Surely such a statement is quite unnecessary, as it would be an utter impossibility to perform an anastomosis between the third stage of the duodenum, which is the really fixed part of that portion of the alimentary tract, and the stomach, while the second stage of the duodenum could be united to the stomach only after being freed; thus doing away with its fixity.

On page 79, under the title of Pylorectomy, the following sentence occurs:—"For my own part I have reversed the order of procedure, and my practice in cases of suspected cancer of the pylorus is to perform an exploratory operation, and, after examining the growth and its connections, I then unite the jejunum to the stomach at some considerable distance from the pyloric growth. After the patient has recovered from this operation, the question of pylorectomy is discussed, and is urged if the growth is freely movable. A fortnight after the first operation the abdomen is re-opened, and the pyloric tumour, together

with the glands, removed, and the ends of the stomach and duodenum closed with a double row of sutures."

This is the line of procedure urged years ago by Tupolské, but only when the patient was very enfeebled. Under such circumstances we consider the procedure might occasionally be of benefit, but to adopt this "reversed procedure" in such cases as the author refers to—viz., early cases—is, certainly, not in accordance with our ideas of the treatment of cancer. In the first place it permits, for at least another two weeks, the cancerous cells to continue their poisonous action or secretions, the absorption of which for this extra period may be the means of adding the last straw to the patient's already taxed recuperative powers. In the second place, a growth which at the exploratory laparotomy was freely movable and capable of complete removal by the end of another two weeks may have become fixed or have infiltrated and infected the surrounding tissues and glands to such an extent as to render its removal with any great prospect of completeness, and, consequently, freedom from early recurrence, doubtful. Lastly, the patient has been known to derive so much relief from his suffering from the performance of the preliminary gastro-enterostomy as to absolutely refuse further operative interference, while in other cases the pain and vomiting for the first day or so after this preliminary operation have been so severe as to make the patient decline to undergo any further treatment.

The author's method of performing colotomy, or colostomy, as we prefer to term the operation, is an excellent one in cases in which the intestine can be pulled out to such an extent as its performance requires. No account is taken of those, fortunately rare, cases in which the gut cannot be brought so freely outside the abdomen on account of shortness of the mesentery. We confess to surprise at finding a surgeon of Mr. Bidwell's experience state that an attempt may be made to reduce an intussusception by means of injection if the case is seen early. Most surgeons of experience have long since recognised the uselessness—nay, even the danger—of temporising with cases of acute intussusception in young infants by

injections or any other method short of immediate operation.

The author's method of dealing with the appendix in cases of general septic peritonitis arising therefrom does not commend itself to us, nor, indeed, does his method of applying pure carbolic acid to the cut end of the appendix.

On the whole, the volume, with the aid of the exceedingly clear diagrams, should be of vast assistance to the student or junior practitioner in his attempt to master the methods of intestinal suture.

SECOND NOTICE.

First Report of the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. By the Director, ANDREW BALFOUR, M.D., &c. Department of Education, Sudan Government, Khartoum. 1904.

THIS is a handsome volume of some 90 pages, describing the inception and the first fruits of a new research laboratory, equipped by Mr. Henry S. Wellcome, at the Gordon Memorial College, Khartoum. Well printed in large, clear type, on excellent paper, tastefully bound, and profusely illustrated, the Report is a characteristic product of the enterprise, coupled with attention to detail, that have made the name of Mr. Wellcome's firm a "household word" in the English-speaking world. After a sketch of the history of the foundation of the Laboratory, the Director gives an account of the prevalence and distribution of the several kinds of mosquito at Khartoum and along the Nile, and illustrates it with photographs of their breeding places. The destructive effect on the insects of pouring oil on their watery abodes, or tinging them with a chrysoidin (a yellow aniline compound) is discussed in the light of some experiments, but the results obtained were hardly uniform enough to be conclusive. Attempts were also made to utilise natural agencies inimical to the disease-bearing insects, such as fish and water-insects, that feed upon the larvæ, and certain parasites, one a sporozöon, the other a larval round-worm that is said to render the female guat barren, are mentioned

in this connection. This seems "rounding" on the mosquito—paying it back, so to speak, in its own coin!

Dr. Balfour then goes on to describe biting and noxious insects other than mosquitoes, and has to chronicle the discovery by Lt.-Col. Griffith of the Tse-tse Fly, the carrier of the Nagana Trypanosome, on the Ponga river in the Bahr-el-Ghazel Province of the Sudan. There is a beautiful coloured plate of two sorts of vesicating beetles rich in cantharidin. Next we come to a description of some of the plants and animals that cause injury to crops. This is illustrated by handsome coloured plates of the Melon Bug and of certain "Lady-Birds" that prey on destructive aphides. Then come notices of cyanogenesis (development of hydrocyanic acid) in millet which is used as fodder (dura), of routine work in pathology and chemistry, including some interesting blood-counts showing eosinophilia in bilharzia and guinea-worm disease, and finally there is a beautifully-illustrated account of the mosquitoes of Egypt, the Sudan, and Abyssinia, written by Professor Theobald, and founded on specimens collected by Dr. Balfour. The reflection that arises in one's mind after a careful survey of this first Report is that the expenditure on non-essentials is disproportionate to the results of scientific value contained in the book. Little or nothing that is new has as yet been achieved, and it does seem a pity that costly and beautiful illustrations which would find their proper place in a treatise on Parasitology or Entomology should lie *perdu* amongst matter that can hardly claim a permanent place on the library or laboratory book-shelf.

Urine Examination made Easy. A Method of Examining Urine with the Common Tests fully described. By THOMAS CARRUTHERS, M.A., M.B., Ch.B. London: J. & A. Churchill. 1904. Pp. 32.

WRITTEN in the first instance for the instruction of the nurses of the City of Glasgow Fever Hospital, Ruchill, Glasgow, Dr. Carruthers' "Notes" will be found useful by all medical students. Even fully qualified medical

practitioners will find in the few pages which make up this little book a simple guide to a thorough examination of the urine.

Not the least attractive feature in these "Notes" is the clear, bold type in which they are printed, and the free use of small capitals, italics, and Egyptians emphasises the points which the author desires to drive home. There are five sections, of which the respective headings are:—"What is Urine?" "How to Prepare a Specimen," "How to Examine a Specimen," "Is the Urine Normal?" and "Abnormal Urine with some common causes."

Blank leaves have been inserted among the "Tests" for notes of further tests which may be required in certain cases. The price of the book is one shilling and sixpence net.

Nothnagel's Encyclopedia of Practical Medicine. English Edition. Malaria, Influenza, and Dengue. By DR. JULIUS MANNABERG, Professor of Internal Medicine, University of Vienna; and Dr. O. LEICHTENSTERN, formerly of the University of Cologne. Edited, with additions, by MAJOR RONALD ROSS, F.R.C.S., F.R.S., C.B., Professor of Tropical Medicine, University of Liverpool; J. W. W. STEPHENS, M.D., D.P.H., Walter Myers Lecturer in Tropical Medicine, University of Liverpool; and ALBERT S. GRÜNBAUM, M.D., F.R.C.P., Professor of Experimental Medicine, University of Liverpool. Authorized Translation from the German, under the editorial supervision of ALFRED STENGEL, M.D., Professor of Clinical Medicine in the University of Pennsylvania. Philadelphia and London: W. B. Saunders & Co. 1905. 8vo. Pp. 769.

A PORTLY volume truly to be devoted to a study of only three maladies. But then, perhaps, the far-reaching importance of these diseases—malaria, influenza, and dengue—justifies their discussion in minute detail by master-minds. Dr. Julius Mannaberg, of Vienna, writes on the Malarial Diseases—his monograph occupying more than 500 pages of this large volume. The late Professor

O. Leichtenstern, of Cologne, was the author of the fine treatise on Influenza, which runs to some 200 pages, and also of the article on Dengue, with which the volume closes. Leichtenstern's work on Influenza was published in 1898—"the irony of fate decided that he should die of croupous pneumonia following influenza on February 23, 1901, at the too early age of fifty-four years" (from the Editor's note). Writing under date of May, 1905, Dr. Grünbaum observes that the seven years which have elapsed since the publication of Leichtenstern's book have not seen many essential additions to our knowledge of influenza. So complete is his description that even in the most modern text-book of bacteriology he is largely quoted. In respect to dengue, we are reminded—in reference to certain remarks on ætiology in the article on that disease—that Leichtenstern wrote it before the publication of Ronald Ross's researches on malaria and the discoveries which have arisen therefrom.

Dr. Stephens, speaking in his preface of Professor Mannaberg's "very comprehensive and learned treatise of the history, symptoms, and treatment of malaria," tells us that the only changes he has made in his article have been to correct the views and arguments based on the miasmatic theory of the origin of malarial infection which the discovery of the part played by certain mosquitoes in transmitting infection has rendered untenable. The section on "Malaria in its relation to the Mosquito" (pages 115 to 220) is by Dr. Stephens himself, and brings our knowledge of the question up to the present date. This learned contribution to the volume occupies more than one hundred pages, and is very complete. We read with some surprise the following sentence (page 141):—"That mosquitos have ever been introduced by ships or railways from one continent to another there is no evidence to show, and, in fact, the well-defined areas of distribution of the *Anophelinae* are against this." In the very same page Dr. Stephens, when throwing doubt on the flight of mosquitoes as far as 20 miles out to sea with a favouring wind, seems to contradict himself by saying: "In my opinion, most of these statements require to be

received with caution, as it is not at all improbable that the source of the mosquitos lies in some overlooked place on board, in some covered water-butt or some recently opened hold."

Glancing through the three monographs which make up the weighty volume before us, we begin to wonder at the gigantic dimensions which medical literature is rapidly assuming. The thought suggests itself whether this literary specialism is not likely to defeat its object and to develop habits of carelessness rather than precision in the student of Medicine, qualified to practise, and unqualified alike.

New Methods of Treatment. By DR. LAUMONIER.
Translated and edited from the second revised and enlarged French edition by H. W. SYERS, M.D.
London: A. Constable & Co. 1904. Pp. 321.

THIS is a somewhat uncommon kind of book. It aims at being more than a mere formulary or trade advertisement, and seeks to bring together information concerning the new drugs and methods of treatment whose worth has been established, and which are sufficiently well known to be described in a definite and practical manner.

Each chapter is prefaced by a summary account of pathological physiology and pathogeny, with the intention of affording some sort of scientific basis for the therapeutical discussion which follows. Opinions will naturally differ as to what ought to be included and what omitted in a work of this kind, and some of the articles may, to English readers, appear superfluous, or as having slender claims to recognition. Many of the drugs and some of the methods referred to are undoubtedly of ephemeral interest, and appear likely to vanish quickly into the limbo of forgotten remedies.

Enough, however, remains to form a readable, if somewhat discursive, volume, which will be of distinct service to teachers and to many practitioners whose leisure and opportunities for wide reading are necessarily limited.

As an indication of the scope of the work we give the

headings of the Chapters. Chapters I. and II. treat of Nutritive and Blood Alterants, vague terms, which include proteids, cacodylic acid, derivatives of vanadium, persulphates, orexin, substitutes for iron, &c. To these succeed chapters on Mineral Medication, Respiratory Alterants, Renal Alterants, Vaso-motor Alterants, and Opothorapy—*i.e.*, the employment of glandular extracts and juices.

The remaining chapters deal with Serotherapy and Vaccination, Nerve Alterants, Antipyretics, and Antiseptics, including the colloid compounds of silver and mercury. From this list can be seen the wide range of subjects discussed, and we can cordially recommend the book to our readers.

The Size of the Articular Surfaces of the Long Bones as Characteristic of Sex: An Anthropological Study. By THOMAS DWIGHT, M.D., LL.D.; Parkman Professor of Anatomy at the Harvard Medical School. With 6 Plates. Reprinted from *The American Journal of Anatomy.* 1904.

THE writer of this brochure has undertaken to discuss an interesting and suggestive item of anatomical research by the aid of the statistical and diagrammatic methods. Most dabblers in anatomy incline to the belief that the sex of a human subject can generally be shrewdly guessed at after the inspection of the long bones of the limbs; while none, surely, but a faddist, and a peculiarly gaseous specimen of that genus would endeavour to persuade us, or himself, that a reliable diagnosis can in all cases be formed from those data. In his opening paragraph Professor Dwight quotes the opinion of an eminent expert:—“The late Professor Bointon very near the end of his life declared that, apart from the pelvis, there is no guide to the sex among the bones.” And his own conclusion on the subject is summed up in the following sentence:—“Without going so far as Professor Bointon, we may say that with our present methods, excepting the pelvis—and even this is not always conclusive—in the great majority

of cases the expert must form his opinion of the sex of bones from their general appearance, and that comparatively rarely can he speak (still excluding the pelvis) with any great certainty." The reader's inevitable conclusion at the close of such enlightenment obviously is that the "sex of bones" is still an unsolved problem, and more than likely to remain such. Our author's style here and there presents some features—we may even be allowed to call them excrescences—which we, in our insular experience, have been studiously taught to avoid. In quoting Hyrtl's statements regarding the value of an examination of the sternum as an index of the sex of its former owner, Professor Dwight thus represents one anatomical fact:—"The manubrium of the female sternum exceeds in length that of half the body; while in the male sternum it is at least twice as long as the manubrium." We are unable to refer to the original text of the eminent Viennese anatomist as we write; and we have often felt as painfully conscious as ever did Mark Twain himself of the aggravating tortuosity of Germanic diction; yet we must candidly state that we have no recollection, from the whole of our rather extensive experience of the scientific literature of that great Empire, of such an unexpected example of grammatical "twistification" as that presented in the short sentence just quoted.

Professor Dwight's "new method" of determining the "sex of bones" is wholly connected with the articular extremities of the long ones. His test is "the relatively small size of the articular surfaces of the long bones in the female." He has hitherto limited the demonstration of the principle to the heads of the humerus and femur, although he believes that it "applies to the long bones in general." So do we—most fully—as also that it is necessarily associated with the usually wider and more laborious movement and exertion exacted by the conditions of existence in the male, in the vast majority of our contemporaries as well as ancestors. It is a result of the same congeries of physical factors which produce the more pronounced muscular impressions by which the

masculine skeleton is—usually—easily distinguishable. There needs no ghost to come from the grave to announce so very glaring an anatomical fact. Indeed, its elaboration in thesis shape has very strongly impressed upon us what a remarkable “devolutionary” development the science and the teaching of human anatomy have undergone during the past quarter of a century!

A Practical Manual of Insanity for the Medical Student and General Practitioner. By DANIEL R. BROWER, M.D., and HENRY M. BANNISTER, M.D. Philadelphia and London: W. B. Saunders. 1905. Large 8vo. Pp. 426.

AN excellent book containing no purple patches and propounding no wonderful new theory of a season, but giving the root of the matter in moderate and scholarly terms. It is pleasing to note, by the way, that the language is English, the almost forgotten dialect of Sir Thomas Watson. The authors' calmness of style is not only eminently suitable for a scientific work, but it is often very effective. The story of the judicial murder of the wretched paranoic lad, Prendergast, who, prompted by delusion of Divine Command, killed Harrison, Mayor of Chicago, could not be better told. In America, as in England, lunacy law is lawyer-made and lawyer-worked, while juries, who in ordinary cases seem content to spin a teetotum for their verdict, can be always trusted in a sensational case to be equally oblivious of the obligation of their oath and of the claims of truth or reason, and to content themselves by satisfying the titillation of the popular sentiment which they share. The fact that we should avoid the practice of dissimulation in the examination of patients is illustrated by a neatly-told anecdote:—"The physician who entered the presence of a religious lunatic as a clergyman, and was asked by the patient to pray with him, being out of practice in prayer, now thinks that dissimulation should not be practised." The authors recognise the *facies epileptica*, and find that the peculiar expression can be caught in a composite photograph, but their analysis of it is not free from

objection. This little question shows the difficulty that surrounds the description of mental manifestations. Every observer has noted the *facies epileptica*, yet this comparatively simple and largely physical phenomenon has not yet been satisfactorily analysed.

General Paresis: Clinical and Practical. By ROBERT H. CHASE, M.D. London: Rebman. 1905.

HERE we have a work entirely fulfilling its author's object, which was "to compile a study of general paralysis addressed to the practitioner and the student." An excellent compilation has been produced, containing in brief everything of importance for the non-specialist. The author has, however, one fault—he is too modest. He gives too little of his own long experience and too much of other men's, and although his plan of referring to no point without quoting an illustrative case has much to commend it, it does not contribute to the production of an easy style. Mickle's book being too long for the student and practitioner, Dr. Chase's is the best practical monograph that has appeared in English on this important subject.

A Text-Book of Materia Medica. By R. A. HATCHER, M.D., and TORALD SOLLMANN, M.D. Philadelphia and London: W. B. Saunders & Co. 1904. Pp. 411.

THIS book represents a praiseworthy attempt to inculcate the study and teaching of the organic *Materia Medica* from the practical aspect, and this plan has, we are told, met with marked success in the Cleveland School of Pharmacy.

Therapeutics is slightly and superficially treated, and the work is one which appeals rather to the pharmacist than to medical students. Inorganic chemicals and their preparations are entirely passed over.

Nearly half the space is given up to a systematic study of crude drugs, arranged according to the parts of a plant. In Part II. a brief and well-illustrated account is given of plant histology, and numerous practical exer-

cises are indicated. Glycerine jelly is recommended as the simplest and most useful mount. Part III. is allotted to chemical exercises in *Materia Medica*. This part seems to us the best portion of the work, and many of the experiments described are interesting and instructive, and some of them are novel. The book will undoubtedly prove extremely useful to pharmaceutical students and lecturers on *Materia Medica*.

The Vermiform Appendix and its Diseases. By HOWARD A. KELLY, A.B., M.D., Professor of Gynæcology in the Johns Hopkins University, Baltimore; and E. HURDEN, M.D., Assistant in Gynæcology in the Johns Hopkins University, Baltimore. With 399 original Illustrations, some in colours, and 3 Lithographic Plates. Philadelphia: W. B. Saunders & Co. 1905. Pp. xxi + 827.

If anything was required to emphasise the importance to which the appendix has at present attained, the fact that the study of it and the conditions to which it gives rise necessitated a volume of 827 pages would, at any rate, help to do so. Professor Kelly was well known as a distinguished author by the production of his work on gynæcology some years ago, consequently the profession had a fair idea of what the present work would be like when it was announced that he was working at the production of a volume on the diseases of the appendix. Detailed and lengthy criticism of such a work is unnecessary; the author's name, indeed, is a sufficient guarantee for its excellence. Suffice it to say that every phase of the subject, from the history of the disease traced from the first recorded case down to its medico-legal aspects, is treated in a masterly manner. Special chapters are devoted to the consideration of appendicitis in typhoid fever, to appendicitis in children, and its relations to gynæcological and obstetrical conditions. Naturally a good deal of space is given to the various methods in practice for the removal of the appendix.

We must here specially mention the wealth of illustra-

tions with which the work abounds. Their excellence and beauty could not be surpassed, and the artists are to be very highly complimented on their skill and success.

The work is one we can most cordially recommend to every member of the profession, and we heartily congratulate the distinguished author on the success of his work. The publishers deserve more than a passing word of praise for the manner in which they have reproduced the illustrations, while the letterpress leaves nothing to be desired.

Surface Anatomy. By T. GILLMAN MOORHEAD, M.D. (Univ. Dubl.); M.R.C.P.I.; Physician, Royal City of Dublin Hospital; late Chief Demonstrator of Anatomy and Joint Lecturer in Applied Anatomy, T.C.D.; Lecturer in Medicine, Royal Services School, T.C.D. London: Baillière, Tindall & Cox. 1905. Pp. viii + 150.

THE little volume before us consists for the most part of the courses of lectures Dr. Moorhead was in the habit of delivering on applied anatomy in the Anatomical Department of Trinity College, Dublin. The teaching is accurate, and can be relied upon. Anyone who knows the author can vouch for the fact that he will not willingly state anything the accuracy of which he has not verified so far as he can. We can recommend the book to every student of medicine.

Exercises in Practical Physiology. By AUGUSTUS D. WALLER, M.D., F.R.S. Part II.—Exercises and Demonstrations in Chemical and Physical Physiology. By AUGUSTUS D. WALLER and W. LEGGE SYMES. London, New York, and Bombay: Longmans, Green & Co. 1905. 8vo. Pp. 79.

IN this part of his "Practical Physiology" Dr. Waller gives exercises on the blood, circulation, carbohydrates, proteids and fats, and their digestion and absorption: milk, muscle, the urine, and respiration. The exercises are well chosen, the directions clearly and concisely given,

and the text is illustrated by numerous drawings of apparatus, microscopic objects, reproductions of tracings, &c.

Among the numerous laboratory guides now at the command of the student this work of Dr. Waller must take a deservedly high place. We can most cordially recommend it to students.

The Open-Air Treatment of Pulmonary Tuberculosis.

By F. W. BURTON-FANNING, M.D. (Cantab.); Physician to the Norfolk and Norwich Hospital; Honorary Visiting Physician to the Kelling Open-Air Sanatorium. "Modern Methods of Treatment Series."
London: Cassell & Co., Ltd. 1905. Pp. 176.

THIS work aims at providing a practical guide to the modern method of managing cases of pulmonary tuberculosis on the lines of "elaborated common sense." Dr. Burton-Fanning suffers from no illusions as regards his subject. He recognises that the consumptive patient is engaged in a life-long struggle, and that while amelioration of his condition is comparatively a simple matter, cure, in the sense of subsequent freedom from disease, is much more difficult to accomplish. The point to be aimed at all through treatment is to bring the patient up to fighting strength.

Much stress is laid on the taking of the temperature, preferably in the rectum, and on the pulse-rate, during the course of treatment. These indicate the progress of the case rather than the physical signs presented on examination of the chest. Speaking generally, only limited affections of the lungs are compatible with complete loss of signs, "so long as examinations conducted at intervals of a month or two prove that no extension of the signs is occurring, their mere persistence is not necessarily of grave consequence. If damage is confined to a small portion of the lung, the patient may attain to a position of moderate security although moist sounds are always audible."

The author condemns the routine practice of over-feed-

ing, and considers that while stimulants are decidedly beneficial when prostration is a marked feature, their habitual use is to be avoided.

The most frequent cause of relapse being fatigue, the patient must avoid strain—physical and mental—if the improvement gained by sanatorium treatment is to be maintained.

The book presents the modern method of treating pulmonary tuberculosis in its simplest form, and shows how patients may be dealt with in the absence of elaborate buildings with hope of benefit. It is rightly argued that if fresh air is the most potent medical agent, money should not be expended in providing unnecessary protection for the patient from the very means of restoration.

Dr. Burton-Fanning has produced an instructive book which will repay the study of practitioners, and aid them in the fight against the ever-present scourge of consumption.

The Dublin University Calendar for the Year 1905-1906, to which are added the Ordinary Papers set in the year 1904-05. Vol. I. Dublin: Hodges, Figgis & Co. 1905. 8vo. Pp. vii + 72* + 421.

THE first volume of *The Dublin University Calendar* for 1905-06 appears in good time. Our copy reached us on September 22—fully three weeks before Michaelmas Term began. There is one new feature in the Calendar—a description of the Normal Climatological Station established in 1904 (page 290). Some very important changes also may be found in the regulations of the various professional schools. The new regulations of the School of Physic in Ireland are printed in full at page 235, and should be carefully studied by all intending medical students, as they apply to students who may enter the School in or after the Summer Session of 1906.

There are some slips in this part of the Calendar, due apparently to the Editor's trust in the revision of the regulations by the Medical Registrar. Thus on page 236 a foot-note refers to "p. 29." This should read

“p. 251,” as the foot-note is correctly printed at page 233. Again, at pages 227 and 249, the University qualifications in Dental Science are described as being in “Dental Surgery”—a term which was especially avoided by the Senate after due consideration by the Board of Trinity College and the University Council.

A Text-Book of Obstetrics. By ADAM H. WRIGHT, Professor of Obstetrics in the University of Toronto; Obstetrician and Gynæcologist to the General Hospital, Toronto, Canada. With 224 Illustrations in the text. New York and London: Appleton & Co. 1905. 8vo. Pp. xvii + 591.

THIS is a clearly written and most interesting account of modern obstetrical theory and practice, and in it the author has to a very marked extent broken away from the trammels of old ideas and superstitions. In consequence, his book is of value from cover to cover, and in its 570 pages contains more information of practical importance than is to be found in many other and far larger works.

The author, on page 338, goes to some little trouble to bring together the opinions of different writers on the treatment of external accidental hæmorrhage—opinions that differ widely from one another. We are pleased to see that he gives his decision in favour of the treatment recommended by the Dublin School, and that he has not allowed the old and well-worn dogmata of London and elsewhere to convince him against his better opinion. He will, we are sure, read with pleasure the report of the proceedings in the Obstetrical Section of the British Medical Association Meeting of 1904, when Dr. Galabin admitted that he had long been a believer in the use of the vaginal tampon, and had refrained from recommending it in his published works out of fear that his student readers might be ploughed for their examinations, and that at the same meeting Dr. Herman, who formerly threatened to plough all students who mentioned the treatment, though present, did not speak. In short,

those who recommended the use of the tampon practically swept away all opposition.

Perhaps the book is a little more dependent on the writings of others than is quite usual, but inasmuch as in every case the author gives the name of the writer from whom he quotes, or to whom he refers, the peculiarity is a good one. We fancy we can also detect slight similarities of style, but such similarities are surely complimentary to the writer unintentionally copied. Is not imitation the sincerest flattery?

An Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology. Compiled for the New Sydenham Society (a continuation of the "Atlas of Pathology") chiefly from original sources. Fasciculus XXIII., being XV. of the Clinical Atlas. Drug Eruptions. Plates CXIV. to CLII. London: The New Sydenham Society. Agent: H. K. Lewis, 136 Gower Street, W.C. 1905. Folio.

IN the fifteenth Fasciculus of the New Sydenham Society's Clinical Atlas the dangers which occasionally attend the administration of iodide of potassium are vividly shown in a series of eight coloured plates. The first of these portraits is familiar to us, being reproduced from the Society's Atlas of Skin Diseases, in which the skin affection was described as iodide hydroa. It is now more correctly named the vesiculo-bullous form of the iodide eruption.

The second case illustrated is a very remarkable one. A male infant, aged five months, was given $2\frac{1}{2}$ grains of iodide of potassium. It was stated that the child became ill within an hour, turning black in the face, and the lips and eye-lids quickly becoming swollen. A vesicular and hæmorrhagic eruption then developed, and there were numerous hæmorrhagic extravasations over all the extremities. The child died 48 hours after admission to hospital.

The other portraits are respectively—the face of a man showing a tuberculous iodide eruption, the face and bust of a

man with an ulcerating iodide eruption, a man's hand with a vesicular-iodide eruption, the arm of a woman showing iodide hydroa, the face of a woman with fungating iodide eruption, and the arms of a woman with iodide (?) hydroa.

The Rational Treatment of Running Ears. By FAULDER WHITE, F.R.C.S. Eng. London: Iliffe & Sons, Ltd. 1905. Pp. 35.

THIS short monograph collects under one cover some papers and addresses by the author on the subject of chronic otitis media suppurativa, and his special points may be shortly recapitulated:—

1. The use of a non-toxic antiseptic. He suggests a solution of silico-fluorides of potassium (salafer), and copious irrigation.

2. Intra-meatal operations, as opposed to the radical operations so often done in these cases.

He brings forward cases to show that these two forms of treatment in combination will often bring about recovery of even severe cases. Otectomy is, perhaps, his favourite operation, and appears, in his hands, to give very good results, though many authorities do not agree with him in this.

The only omission which the author seems to have made is, that he does not mention peroxide of hydrogen, which is now so largely used in these suppurative affections, and might, one would think, be combined in his treatment, with advantage to the patient.

Mucous Membranes (Normal and Abnormal). By WM. STUART-LOW, F.R.C.S. London: Baillière, Tindall, & Cox. 1905. Cr. 8vo. Pp. x + 59.

THIS short monograph introduces a subject which has been too often passed over by writers on the various secretions of the body, and, in fact, until a short time ago the subject of mucin was little understood.

Mr. Low takes up this subject and deals with it very clearly, not alone in his own special portion-- that of

nose, throat, and ear---but also in the rest of the mucous tract. It will repay anyone to read this book, no matter whether he is a general practitioner or a specialist. He goes very fully into the anatomy and position of the mucous glands, and then describes in detail the actual affections of the mucous apparatus in the nose, dealing more shortly with those of the intestines, &c.

There appears to be room for further investigation in this direction, and I think the remedy mucin offers us a very excellent treatment for ozæna and kindred affections. He suggests lines of treatment, dietary, and hygienic rules for the various class of patients, and winds up with a chapter in which he endeavours to show the connection between mucin and malignancy, and certainly his points are worth investigation. Finally, in an appendix, he gives directions for preparing mucin solutions for various purposes, and then a list of some cases in which the connection between malignant disease and hyponymyia is very clearly shown.

Dispensing made Easy. With Numerous Formulæ and Practical Hints to secure Simplicity, Rapidity, and Economy. By WM. G. SUTHERLAND, M.B. Aberd.: formerly House Surgeon, Queen's Jubilee Hospital, Earl's Court, London, S.W.; Civil Surgeon-in-Charge, Orange River Military Hospital, Boer War, 1900, &c., &c. Second Edition, revised. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1905. Pp. viii + 104.

THE apology with which Dr. Sutherland prefaced the first edition of his work in January, 1904, was not necessary. The production of a second edition in the May of 1905 shows that he saw a want of "certain information" amongst the medical profession, and, moreover, that he was able to supply the "deficiency."

The value of this book, as compared with others of the same class, appears to be "that it opens the eyes of medical practitioners to an economical and businesslike view of the dispensing department of their practice."

Such information is not usually a part of the training of a physician and surgeon; therefore, the advice and help offered by Dr. Sutherland are of the greatest benefit—"How to cut down the drug bill" without interfering with the efficiency of the prescriptions, means a large saving in the working of a medical practice. Every general practitioner who dispenses his own medicines and who has not had a training in the art of practical pharmacy, and the experience of an open chemist's shop, may read the first twenty-five pages of this book with the view of getting valuable advice, which will doubtless result in the reduction of his expenses.

Diseases of the Heart. A Clinical Text-Book for the use of Students and Practitioners of Medicine. By E. H. COLBECK, M.D. Cantab.; F.R.C.P.; Physician to Out-patients at the City of London Hospital for Diseases of the Chest. With 43 Illustrations. Second Edition, revised and enlarged. London: H. Kimpton. 1904. Pp. 350.

THE first edition of this work was published in 1901. Within four years a new edition is called for. A fact such as this is a far greater proof of a book's value than many laudatory reviews would be. It is evident that Dr. Colbeck's work has been found useful by many.

On a subject concerning which so much has been written as the heart, it is difficult to say anything that is new, or even to say things in a novel style. All that can generally be expected of a book is that facts should be set forth in a clear and logical manner. Judged by this standard Dr. Colbeck's work deserves a high place. We have rarely met a more painstaking and thorough presentation of the physical signs presented by the heart in all its morbid conditions and of the pathological processes which lead to the hypertrophy, dilatation, or other changes which that vital organ undergoes.

In this edition an excellent account is given of the effects of mechanical strain upon the heart, and the connection between violent exertion and acute dilatation is

very carefully and fully discussed. The instrumental determination of blood-pressure is described, but much space is not allotted to this subject, as the author does not appear to consider that at present such investigation is very practicable.

The work is well printed and illustrated.

Golden Rules of Medical Practice. By LEWIS SMITH, M.D. (Lond.); M.R.C.P. (Lond.); Assistant Physician and Pathologist to the London Hospital: late Medical Tutor to the London Hospital Medical College. No. IV. Enlarged and entirely re-written. Sixth Edition. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1905. Pp. 126.

THERE is really a vast amount of concentrated clinical and scientific wisdom and advice included in the pages of this (vest-pocket) *vade mecum*, so that although we can never quite conscientiously recommend such volumes for general use, we cannot harden our hearts so far as to say anything against the present minute specimen.

Dietetics for Nurses. By JULIUS FRIEDENWALD, M.D., Clinical Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore; and JOHN RUHRÄH, M.D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Philadelphia and London: W. B. Saunders & Company. 1905. Cr. Svo. Pp. 363.

THIS portly octavo of 363 pages has been prepared, as the authors inform the reader, "to meet a need in the training-school and as a hand-book for nurses and laymen who are interested in the subject of feeding the sick." They are quite correct in saying that the larger reference works contain too much, while the text-books on invalid cookery ordinarily used contain too little information. The volume before us is a highly instructive one. There is a good (brief) review of the physiology of digestion. The various classes of foods are considered.

and the part which they respectively take in nutrition is carefully noted. The feeding of infants and of the sick receives not only scientific but philosophic and moral attention and discussion. The feeding of cases after surgical operations is lucidly dealt with, and so is rectal alimentation. Valuable diet lists and instructions are appended, and the "Recipes" are extremely well selected. We cordially recommend this volume to nurses and, indeed, to all who are interested in the care of invalids.

Reports of the Commission appointed by the Admiralty, the War Office, and the Civil Government of Malta for the Investigation of Mediterranean Fever, under the Supervision of an Advisory Committee appointed by the Royal Society.

IN the first of these Reports Staff-Surgeon Shaw, R.N., shows, *inter alia*:-

(1) That out of every three subjects of Mediterranean fever two have the specific micro-organism *Micrococcus melitensis* present and demonstrable in their circulating blood;

(2) That 4 cubic millimetres (exactly $\frac{1}{256}$ cc.) is the smallest individual quantity of blood from which the coccus has been isolated. [The author expressly protests against the inference that 256 cocci are contained in each cubic centimetre of blood.]

(3) The higher the agglutinating power of a blood during the fever the larger is the minimal quantity of blood yielding *M. melitensis* likely to be. A correlation is suggested between this and the patient's power of resistance to *M. melitensis*.

In a second Report by the same writer it is shown that the micrococcus is not contained in the skin, breath, or sweat of patients.

The third Report contains experiments showing, *inter alia*, that the organism can survive 276 days on agar slope culture, up to 49 days in urine from Malta fever cases, up to 78 days dried on navy serge, 72 days in unsterilised potable water, 46 days in unsterile sea water,

15 days dried on cover slips, 91 days in soil, &c.—results which show it to be one of the most resistant of non-sporing organisms.

By far the most important addition to our knowledge contained in the book is due to Dr. Zammit, who has shown that many of the goats supplying milk at Malta are affected with the fever, that their blood-serum agglutinates the micrococcus sometimes in high dilution, and—as the culminating point of interest and practical importance—that the milk of these goats may swarm with the pathogenic organisms, and thus become the means of propagating the disease. This unexpected result is all the more satisfactory as pointing the way to a mode of prophylaxis as easy as it is efficient, and the nature of which is so obvious that it need not even be specified.

Squint: Its Causes, Pathology, and Treatment. By CLAUD WORTH, F.R.C.S. Second Edition. London: John Bale, Sons, & Danielsson, Ltd. 1905. 8vo. Pp. 231.

We gladly welcome a second edition of Dr. Worth's most admirable treatise on squint. As we had the pleasure, only about two years ago, of reviewing the first edition, which at the time we regarded as the last word on the subject of squint, it is not necessary in the present instance to enter into details. Dr. Worth advocates, with convincing proofs, the importance of a defect of the fusion faculty as the "essential cause of squint." He is a thorough believer in the existence of "amblyopia ex anopsiâ," and also in "congenital amblyopia," and believes that the cases of amblyopia greater than $V. = \frac{6}{60}$ are always acquired and never congenital. "After six years of age," he says, "amblyopia ex anopsiâ seldom takes place to any great extent. Acquired amblyopia is a true loss of vision, not a failure of the function to develop."

We cannot too highly recommend this book to any one desiring to get an accurate and up-to-date account of what is known on the subject of squint.

PART III.

SPECIAL REPORTS.

REPORT ON MEDICINE.

By T. GILLMAN MOORHEAD, M.D. Dub.; M.R.C.P.I.;
Physician to the Royal City of Dublin Hospital.

WANDERING LIVER.

A WANDERING liver has only occasionally been observed in man. Up to this only five undoubted cases have been recorded in the literature. E. Meyer reports a sixth, which he observed in a tram driver, aged thirty-five. The patient had been always quite healthy until one day during severe jolting of his tram he experienced a sensation of pressure over his liver, and on the next suffered from severe pain in the abdomen. On examination, his heart, lungs, nervous system, and kidneys were found perfectly normal, but palpation and percussion of his abdomen, while standing erect, disclosed the presence of a large tumour over the painful area. The lower part of his costal arch above the tumour was tympanitic, while a dull note was obtained at the back, over the same place, so that the hard firm tumour could be nothing but a sunken liver. On lying down the tumour could be pressed up with ease into the normal situation of the liver, ascending 3 c.m. under the costal arch. Furthermore, anteflexion of the organ, which Landau regards as an important diagnostic sign, was present. To obviate all error an X-ray examination was made, which showed very clearly the abnormal position of the viscus. Whether the organ was diseased or not could not be determined. As regards treatment, Meyer advises that a firm bandage should be applied to the abdomen, and if this is not sufficient, operative measures for fixation should be undertaken.—*Berlin. klin. Woch.* 1904. No. 16.

ACUTE AORTITIS.

Dr. W. Broadbent reports a case of acute aortitis. The patient, a man, aged forty-five, was attacked with sudden pain in the left side of the chest, which gradually increased. The radial pulse was somewhat harder than normal, but easily compressible. The apex beat was in the left mammary line, two inches below the nipple, and was feeble. The first sound was weak, the second clear, and there was a short diastolic murmur. Over the aortic and pulmonary valves a short systolic murmur was audible. There was no history of rheumatism or syphilis. Sudden death occurred after 17 days. At the autopsy the inner and outer aspect of the aorta, up to the origin of the innominate arteries, was coloured bright red. The aortic valves were thickened, but competent, and there was early atheroma of the aorta. The right coronary artery was closed by a limy deposit, and the left by the swelling of the intima. The myocardium was healthy, and there were no inflammatory appearances in the left ventricle. Microscopically there was perivascular infiltration of the aorta, especially marked around the vasa vasorum of the aortic coat. *Diagnosis.*—Death from obstruction of the coronary arteries due to swelling of the intima.—*Lancet.* May 27, 1905.

THE ÆTIOLOGY AND PATHOGENESIS OF ERYTHEMA NODOSUM.

The ætiology of idiopathic erythema nodosum is not yet fully understood, but it appears certain that it is not a mere angioneurosis, but rather a true inflammatory process which takes deep origin in the subcutaneous tissue. Hoffmann, after recent investigations, considers it proved that the erythema takes origin from an inflammation of the deeper subcutaneous veins, and that the irritant which causes the inflammation enters the blood stream from the tonsils, the intestinal mucous membrane, or the air passages. After entry, it may settle down and produce merely a phlebitis and a hæmorrhagic inflammation of the overlying tissues, or, less frequently, may attack also a joint, or the cardiac valves, or even the serous membranes. The typical localisation of the erythema to the

extremities, especially to the leg, is easily explained by the anatomical disposition of the veins, while the abundance of valves in the veins of the lower extremity would be unfavourable to the dissemination of the micro-organisms.—*Centralblatt für die med. Wissenschaften*. No. 37. 1905.

GROWTH OF MOULDS IN THE STOMACH.

That many gastric disturbances can be caused by the presence of moulds in the stomach has long been recognised, but their importance has not yet been realised. Schilling had his attention first drawn to the subject by a patient who, after eating some slightly decayed fruit, suffered severely from gastric pain. An examination of the suspected material showed the presence in abundance of the spores of *Aspergillus* and of *Mucor Mucedo*, and the spores of the same moulds were found in the stomach contents. A short time afterwards he observed similar symptoms in a patient who had partaken of mouldy cheese. It is known that moulds can grow in the stomach, and are not inhibited by the acidity of its contents. The appearances which they produce are sometimes of a more, sometimes of a less, severe nature, and consist of burning pain in the stomach, a sense of pressure, eructations, and hyperacidity. Occasionally severe nervous symptoms follow, loss of appetite, catarrhal inflammations, and, lastly, choleraic phenomena. All these are to be regarded as the result of the moulds growing on the stomach mucous membrane, where they produce a growth similar to that of thrush, and containing a number of irritating ferments.—*Centralblatt für die med. Wissenschaften*. No. 37. 1905.

THE PARADOXICAL DIAPHRAGM CONTRACTION.

In 1898 Keintock, during the examination of a case of pyopneumothorax by X-ray illumination, observed that during inspiration the upper surface of the pleural fluid was raised, and that during expiration it sank. This phenomenon, which Keintock called "the paradoxical diaphragm contraction," has since been observed by many authors. In a series of cases it was observed that in some

the diaphragm remained passive on the diseased side, while in others the contraction took place. According to these authors both the paradoxical contraction and the condition of rest on the side of the pneumothorax are the result of a defective "vital retraction" of the lung, which normally during expiration draws upwards the relaxed diaphragm. The diaphragm remains at rest in the horizontal position when no exudate presses upon it, but when an exudate is present it presses down the diaphragm which has become relaxed in expiration.—*Centralblatt für die med. Wissenschaften*. No. 37. 1905.

THE INFLUENCE OF COLOURED LIGHT ON MENTAL PROCESSES.

Dr. Spirtoff contributes a lengthy article on the influence of coloured light on mental work and on the mental faculties generally. He points out that many of the ancient writers—Pliny, Avicenna, and others—have all referred to the influences wrought on the mind by different colours, but whereas the physical effects of light have been largely studied, the psychical effects have been the subject of only scattered and non-systematic observations. From a review of the literature Spirtoff finds that all who have paid attention to the subject have noticed that red light exerts an exciting influence on the mind, and that blue light has an opposite or calming effect. Green and violet light rank with blue, but show less marked results, except that prolonged exposure to violet light usually produces severe headache. Spirtoff himself investigated the influence of red, green, and blue light on six selected individuals, the mental effect of the exposure being determined by the diminished or increased speed with which arithmetical and algebraical calculations could be performed after the exposure. The main conclusions at which he arrived are as follow:—(1) The greatest amount of work in a given time can be performed after a prolonged exposure to blue light. (2) The least amount of work can be done after a similar exposure to red light; while the results from green light were intermediate between those of red and blue. (3) After a short exposure the above order is reversed—i.e., most work can be done after exposure to red or green light, and least

after blue. (4) The influence of ordinary bright light is but little marked.

These results the author regards as confirmatory of previous beliefs; thus after a prolonged exposure the mind, rested by the blue illumination, works well, while with short exposures the exciting action of the red light remains for a time. His results, however, are not sufficiently striking to render it likely that they can be put to any practical account, though the author himself believes that the treatment of melancholics by red light, and of maniacs by blue light, is distinctly indicated.—*Russische medicinische Rundschau*. 1905. No. ii.

MYOSITIS OSSIFICANS.

At the Society for the Study of Children's Diseases in Moscow, Dr. Kissell demonstrated a thirteen years old boy who was suffering from myositis ossificans, and who presented the following symptoms:—The head was bent forwards and slightly inclined towards the left side. On the inner and right side of the mandible there was present a large exostosis, which prevented the mouth from being opened more than 2 c.m. The muscles of mastication seemed normal, but those of the neck and mouth were very hard, and apparently structurally continuous with the adjacent bone. The thoracic muscles also were very firm and hard to the touch, and along the whole length of the vertebral column were numerous irregular outgrowths, which caused in the upper part the forward bending referred to. On both spines of the scapulæ, on the ribs, and within the shoulder muscles, numerous hard outgrowths could be felt. The muscles of the forearm and hand, as well as those of the lower limbs, were unchanged, while the abdominal muscles were merely tense, but without ossification. The history of the case was very interesting. The boy was born healthy, and there was no evidence of any inherited disease or tendency. The first sign of disease appeared in the sixth month of life in the form of a hard nodule at the back of the neck. Similar nodules then appeared on the thorax and vertebral column, some of which softened and exuded a puriform fluid. After the second year the head was noticed to be bent,

and at the eleventh year the boy was brought to a physician. At this time a needle could traverse with some difficulty most of the outgrowths. Later on an incision was made into one tumour, which proved to be composed of swollen muscle of a cheesy hardness and of a reddish yellow colour. Microscopically a small portion that was removed showed an abundance of young connective tissue and a few scattered muscular fibres. A later investigation, after the lapse of a considerable time, showed that the mass had become true bone. —*Russische medicinische Rundschau*. 1905. No. 5. Pp. 305.

CIRRHOSIS GASTROENTORRHAGICA.

Dr. Ludwig von Alder writes an interesting paper on Cirrhosis Gastroentorrhagica of Maixner. He first discusses the question of hæmorrhages in general associated with liver cirrhosis, and points out that it is much more frequent to find hæmatemesis in the later stages than was previously believed. The older writers expected its occurrence in from 12 to 15 per cent. of their cases, but it has been shown by many—especially by Hardicti—that as many as 60 per cent. of cases exhibit the symptom. Gastro-intestinal hæmorrhages, however, also occur in the early stages before the appearance of ascites, and even before enlargement of the spleen is present, and may form the sole diagnostic symptom of the disease. To this type of the disease belong the cases described by Maixner, in which frequently recurring gastric hæmorrhages are found, and in which the process as a whole pursues an apparently mild course. To Maixner belongs the credit of calling attention to these cases and of associating the symptom with true cirrhosis, as proved by *post-mortem* examinations. Dr. Alder reports four cases of this type, in all of which recurring hæmorrhages, varying in amount, and often extending over several years, was the principal symptom, and in none of which did ascites appear while the patients were under observation. He discusses the differential diagnosis, excluding gastric ulcer, pernicious anæmia, and hæmophilia by the absence of other signs, and concludes

that the mildness of these cases must be due partly to the early establishment of collateral circulation *viâ* the inferior vena cava, and partly to the relief afforded to the portal system by the frequent losses of blood. The cases are in fact in much the same anatomical condition as those upon whom the Talma Morrison operation has been performed.—*Berliner klinische Wochenschrift*. August 28, 1905. No. 35.

MYASTHENIA GRAVIS.

In the *Münchener med. Wochenschrift* for 1904, No. 51, Bielschowsky draws special attention to the ocular phenomena observed in this disease, and describes a case in which the most important feature consisted of an extensive and bilateral paresis of the eye muscles, along with defective power of movement in the muscles of the forehead and eyelids. As in this case, so in about one-third of all cases of myasthenia, eye symptoms constitute the first sign of the disease. Ptosis, which appears in almost 80 per cent., very often follows a previous undue sense of fatigue in the eyelids, and may be combined with a paresis of the forehead and lower eyelid. Variation in the intensity of the ptosis, as well as a periodical disappearance in the same, is by no means constant. Often there exists from the beginning a true paresis, or even a lasting paralysis of the eye muscles. The eye muscles are sometimes alone affected; sometimes there co-exist other defects of movement and paralysis of associated muscles. It must be remembered that fatigue may lead to an increase in ptosis, even when the latter is not of a myasthenic nature.

In the *Journal of Mental and Nervous Diseases* for 1905, No. 3, Burr reports a fatal case of myasthenia, with *post-mortem* examination. The central nervous system was found to be quite normal, the thymus gland was persistent and diseased, and groups of lymphoid cells were found scattered through the muscles. Burr points out that enlargement of the thymus has now been so constantly found in these cases as to point to some undoubted relation existing between it and the pathological condition.

UROTOPIN AS A PROPHYLACTIC AGAINST SCARLATINAL
NEPHRITIS.

Patschowski has employed urotropin, as advised by Widowitz, as a prophylactic against scarlatinal nephritis. To children he gives .25 gramme and to adults .5 gr. three times in the day. He observed altogether 53 patients treated in this manner during the course of a severe epidemic. In eight cases the drug was given on from 10 to 21 successive days, and in only one of these did slight albuminuria occur, but without casts. In 44 cases the patients took the drug from 1 to 4, 9 to 12, or 17 to 20 days. Out of these only two suffered from nephritis, which, having regard to the severity of the cases, must be considered as a very favourable result. The last patient had nephritis when he first came under treatment, but after two days of the urotropin administration the albumin disappeared, and did not again return.—*Therap. Monatschrift.* 1904. Dec.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS, PHILADELPHIA. THE College of Physicians of Philadelphia announces that the next award of the Alvarenga prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1906, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in Medicine, but cannot have been published. They must be typewritten, and must be received by the Secretary of the College, Thomas R. Neilson, M.D., on or before May 1, 1906. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award. The Alvarenga prize for 1905 has been awarded to Dr. Chalmers Watson, of Edinburgh, for his essay entitled "The Importance of Diet: an Experimental Study from a New Standpoint."

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

CLINICAL CASE-TAKING.

By SIR JOHN W. MOORE, M.D. Dubl. ; D.Sc. Oxon. ; F.R.C.P.I. ;
Physician to the Meath Hospital.

It falls to my lot to deliver the Inaugural Address of the Session upon the threshold of which you and I now stand. I would it had been otherwise, for your sake and for my own—for your sake because from the lips of a far younger man would have fallen, no doubt, such burning words as would have kindled your enthusiasm and fanned your fiery zeal for knowledge ; for my sake, because the preparation of an Address has sadly marred that September rest which Mostyn Pigott celebrates in the *Grand Magazine* :—

“ September, we welcome thy coming,
For thou dost provide us with rest ;
No longer Creation’s a-humming,
No longer are humans hard-pressed.
At last we can lie on our backs in the sun
And rejoice that there’s nothing that needs must be done.”

To write an Inaugural Address in this busy Twentieth Century is no easy task. There is so much to be done, so much land to be traversed in the quest for knowledge, that neither lecturer nor audience can spare the needful time for an old-fashioned ceremonial, which is now more honoured in the breach than in the observance. But in the Meath Hospital, with its traditions of more than a century and a half^b, the custom of beginning the Session with an Address survives. Therefore it is that I stand here to-day and crave your attention for a few moments,

^a An Address introductory to the Session of 1905–1906, delivered in the Meath Hospital and County Dublin Infirmary on Monday, October 9, 1905.

^b The Meath Hospital on the Coombe was opened March 2nd, 1753.

while I strive—may it not be in vain—to bring home to your minds and consciences the solemnity of the calling which you have adopted as your life-work—the innate nobleness of the Profession of Medicine.

Yes—the Profession of Medicine is a solemn calling, look at it how we may. It has a threefold aim—to preserve man's health, to restore man's health, or—where that is impossible—to assuage human suffering and to mitigate the pains of death. The preservation of health is the province of Preventive Medicine; the restoration of health is the object of Curative Medicine. Surely the ministers of such a high calling should approach their godlike work with reverence and awe, yet also “in stille Demut und Hoffnung”—in calm humility and hope.

It would be indeed unkind—yes, even ungenerous, on my part—if I said anything in this Address with the intent to damp your ardour in the study of the Profession of your choice. Yet, in all sincerity I am bound to tell you that you have started on a journey which lies along no “primrose way,” but one beset by thorns. Hard work, self-denial, and perchance disappointment in the end await you. A story is told of John Abernethy that at an introductory lecture at St. Bartholomew's Hospital, when he had been received, as usual, with great applause, he appeared utterly indifferent to the plaudits which greeted him, but quietly casting his eyes over the assemblage, burst forth in a tone of deep feeling, “God help you all! what is to become of you?” In *The Practitioner* for August of the present year an anonymous writer, discussing the question of “Medicine as a means of Livelihood,” as it were paraphrases Abernethy's exclamation in the following words:—“It has often been remarked that the Medical Profession is the only one that works for its own undoing. To it mankind owes Hygiene, which has already rid the world of not a few scourges, and which may in time stamp out disease. The triumph of Hygiene means the passing away of Medicine. The art of healing must necessarily become superfluous when there is nothing to heal. Already there are signs which seem to indicate that at least in certain directions the doctor's occupation will, at no very distant day, be gone. It is becoming increasingly difficult for the medical practitioner to make a living. As a friend of ours tersely put it—‘There's not enough acute disease to go round.’ Other causes contribute to the same end. We have taught the public

how to prevent disease, and the manufacturing chemist has taught them how to treat themselves. Hospitals send the rain of their free advice and physic alike on the poor and on those who can well afford to pay. Massage, electricity, and special forms of treatment are largely in the hands of men who are not of the household of medicine. Quacks of all kinds compete with the lawful practitioner. Should the doctor plead *Il faut vivre*, the public will soon be in a position to reply, *Je n'en vois pas la nécessité*. It is difficult to indicate a remedy for a state of things that is largely a consequence of the operation of inexorable economic laws."

And yet I cannot despair of the future which lies before you—members of the Meath Hospital Class—when I recall to mind the truthful, if somewhat vauntful, motto of this Institution—

"Quæ regio in terris nostri non plena laboris!"

Medicine has been classed with the "Learned Professions," but in these latter days its reputation as a learned Profession is at stake. Even in the ancient Universities of Oxford, Cambridge, and Dublin the "old order changeth, giving place to new." Cambridge long since surrendered the requirement of an Arts Degree for graduation in Medicine. Oxford, and more recently Dublin—the latter the youngest of the three academic sisters—while still requiring an Arts Degree, have so whittled down the Arts Course for medical students that it is scarcely recognisable as such.

And yet a liberal education in Arts is indispensable if our object is to turn out the best brand of a physician or a surgeon. The intellectual powers must be carefully drawn out—this is what the word "education" means—the mind can be developed only by constant practice. The student's powers of observation must be trained day by day till they become part of his being—even his second nature. He should learn to reason about observed facts, to arrive at a diagnosis from symptoms and physical signs, and to form an opinion as to the proper treatment of his patients, as to the prospect of recovery (prognosis), and as to the future management of the case.

The idea is perhaps Utopian, but in my judgment it would be well for the medical profession and for the public alike if a University Training and a Degree in Arts formed part of the "making" of every physician and surgeon.

There are, I admit, immense difficulties in the way. Time and

means are wanting in many instances, and the weighty medical curriculum itself forbids the student to linger in the groves of *Ἀκαδήμεια* or to ponder the lessons of the *Στοὰ ἡ ποικίλη*. Nevertheless, to one and all I say strive to secure, even at the cost of personal ease, the lasting and far-reaching benefits of a liberal, and, if possible, a university, education. Then, indeed, will you approach the study of Medicine with a receptive and well trained mind, but above all with a lively sense of the grave responsibilities you are about to undertake and the full significance of the Healing Art.

My special object on this occasion is to impress upon you the paramount importance of a regular daily attendance at the Hospital, or rather I should say at the bedside of the sick. Far be from me to decry the work you are called upon to do in the dissecting rooms, the laboratories, and the lecture-theatres of the Medical Schools. A ripe and practical knowledge of anatomy and a sound acquaintance with physiology and histology, chemistry and physics are essential; and medical authorities do well to insist upon a curriculum which will teach, and examinations which will ensure a knowledge of, these all-important ancillary subjects. But, when all is said and done, the preparation for your life-work will have to be carried on in the out-patient department, the clinical wards, the operating-theatre, and the *post-mortem* room of a well-equipped general Medico-Chirurgical Hospital, such as that within the walls of which we are assembled.

Let us hear a most competent authority on this subject. "How can we make," he writes, "the work of the student in the third and fourth years as practical as it is in his first and second? I take it for granted we all feel that it should be. The answer is, take him from the lecture-room, take him from the amphitheatre—put him in the out-patient department, put him in the wards. It is not the systematic lecture, not the amphitheatre clinic, not even the ward class—all of which have their value—in which the reformation is needed, but in the whole relationship of the senior student to the hospital. During the first two years he is thoroughly at home in the laboratories, domiciled, we may say, with his place in each one, to which he can go and work quietly under a tutor's direction and guidance . . . My firm conviction is that we should start the third year student at once on his road of life. Ask any physician of twenty years' standing how

he has become proficient in his art, and he will reply, by constant contact with disease ; and he will add that the medicine he learned in the schools was totally different from the medicine he learned at the bedside. The graduate of a quarter of a century ago went out with little practical knowledge, which increased only as his practice increased. In what may be called the natural method of teaching, the student begins with the patient, continues with the patient, and ends his studies with the patient, using books and lectures as tools, as means to an end. The student starts, in fact, as a *practitioner*, as an observer of disordered machines, with the structure and orderly functions of which he is perfectly familiar. Teach him how to observe, give him plenty of facts to observe, and the lessons will come out of the facts themselves. For the junior student in medicine and surgery it is a safe rule to have no teaching without a patient for a text, and the best teaching is that taught by the patient himself. The whole art of medicine is in observation, as the old motto goes, but to educate the eye to see, the ear to hear, and the finger to feel, takes time, and to make a beginning, to start a man on the right path, is all that we can do.”^a

These weighty words were written by the pen, and fell from the lips, of William Osler, that famous and erudite physician, whose birthplace was Canada, who spent many of the best years of his life in the Johns Hopkins University and Hospital, Baltimore, U.S.A., and whom His Majesty the King called to Oxford a year ago as Regius Professor of Medicine in that ancient and storied seat of learning.

You will no doubt endorse Dr. Osler's next words—“We expect too much of the student and we try to teach him too much. Give him good methods and a proper point of view, and all other things will be added, as his experience grows.”

I cannot forbear quoting two other paragraphs from the same address : “I envy,” says Professor Osler, “for our medical students the advantages enjoyed by the nurses, who live in daily contact with the sick.” And again : “The objection often raised that patients do not like to have students in the wards is entirely fanciful. In my experience it is just the reverse. On this point I can claim to speak with some authority, having served as an hospital physician for more than twenty-five years, and having

^a “The Hospital as a College.” An Address to the Academy of Medicine, New York. 1903.

taught chiefly in the wards. With the exercise of ordinary discretion, and if one is actuated by kindly feelings towards the patients, there is rarely any difficulty. In the present state of medicine it is very difficult to carry on the work of a first-class hospital without the help of students. We ask far too much of the resident physicians, whose number has not increased in proportion to the enormous increase in the amount of work thrust upon them, and much of the routine work can be perfectly well done by senior students."

The views just enunciated were also held by Graves and Stokes, those illustrious men whose names are on the beadroll of the physicians of this hospital, and of whom we are so justly proud. The foremost clinical teachers not only of the present but of the past have over and over again insisted on the supreme value of hospital practice to the student of medicine. Long years ago the great surgeon, Abernethy, said: "The Hospital is the only proper College in which to rear a true disciple of *Æsculapius*." In an introductory lecture delivered in 1867, Oliver Wendell Holmes expressed the opinion that "the most essential part of a student's instruction is obtained, not in the lecture room, but at the bedside. Nothing seen there is lost; the rhythms of disease are learned by frequent repetition; its unforeseen occurrences stamp themselves indelibly on the memory. Before the student is aware of what he has acquired he has learned the aspects and causes and probable issue of the diseases he has seen with his teacher, and the proper mode of dealing with them, so far as his master knows."

I have thus insisted on the value of hospital practice to the student of medicine because of late years I have observed a growing tendency to neglect the golden opportunities of acquiring professional knowledge and experience which the clinical wards afford. Case-taking, in particular, has not kept pace with other departments of medical study. The attendance at hospital has become spasmodic and intermittent. Over and over again I have missed familiar faces from the clinical class, and asking for an explanation, I get the unvarying reply, "Oh! they are reading for such and such an examination." This is, I conceive, the deadly peril of sessional examinations under the modern Five Years' Scheme of Medical Education. The danger has already attracted attention, and the University of Dublin in the new Regulations of the School of Physic in Ireland has adopted a

remedy. Sessional examinations at the end of each *Annus Medicus* are given up, and in future medical students of the School of Physic will have to pass a Preliminary Scientific and only two professional examinations—the Intermediate Medical and the Final. It will be objected that the student will become careless in his attendance on the courses of lectures in each session if he has not before him the threatening nightmare of a fast approaching examination. This is guarded against by requiring the student to pass a class examination at the close of every course of lectures before he obtains credit for that attendance. Furthermore, the Preliminary Scientific examination in (a) chemistry and physics, and in (b) zoology and botany, may be passed in two groups, while the Intermediate Medical is also divisible into two parts, which may be taken in successive years, if so desired. This reform might well engage the serious consideration of the other Licensing Bodies—particularly the Royal Colleges of Physicians and Surgeons, Ireland, which are at the present moment revising the regulations for candidates under the Conjoint Scheme. Meanwhile, I cannot too strongly express my conviction, based on personal experience, that the modern curriculum and its sessional examinations too far engross the student's attention to the prejudice of his hospital attendance.

And now a word of advice as to the best method of utilising the opportunities which present themselves to you within the sacred precincts of the Hospital.

Too many members of the class are content with a perfunctory attendance. They arrive punctually perhaps at nine o'clock in the morning, mechanically follow the physician or surgeon as he passes through the wards, but are all attention when a rare or "interesting" case is reached. They may even come armed with a note-book, in which "tips" of all kinds are duly entered. Or they may appear half an hour late, and spend some precious moments in seeking the whereabouts of their clinical teacher. Or they may come one day and stay away the next, thereby losing all continuity of work in the wards. Those who thus attend hospital will never gain EXPERIENCE—that priceless possession which at one time was within their reach, had they but realised the fact, but which perhaps they have for ever lost. The point I desire to emphasise with all my power is the absolute necessity of case-taking if a student really wishes to turn his hospital attendance to the best account. He has no excuse for not being

a case-taker. On the first clinical morning of every winter session he receives a copy of a Synopsis of Clinical Instruction, which my colleagues and I prepared with great care a few years ago. It includes, in addition to a full description of the methods of physical examination adopted in our medical wards, valuable suggestions for taking cases. These were originally drawn up by our late distinguished and much lamented colleague, Dr. Arthur Wynne Foot, one of the ablest and most successful clinical teachers whom Dublin has ever produced. In the forefront of this booklet the following paragraph occurs: "The physicians will facilitate in every way clinical case-taking by members of the class. At the close of the summer session a special prize of three guineas will be awarded for the best series of clinical reports of six cases taken during the preceding hospital year."

Let me in this connection clear up a possible misapprehension as to the meaning of the term "Clinical Clerk" in the Regulations of the various Licensing Bodies. It means simply a case-taker—but the cases should be taken fully, one daily visit at least being paid to the patient who at the time being is the "case." On my colleagues' behalf and my own, I may answer for it that we shall not be wanting in readiness to fulfil our part. We will at all times be ready to entrust one or more of our patients to members of the class who express their desire to become "Case-takers" or "Clinical Clerks," using the latter term in its fullest sense. Do you, the students, see that you are equally ready and willing to fulfil your part, and, although it is true that "they which run in a race run all, but one receiveth the prize, yet so run that ye may obtain." If you do, you will never regret the effort, for even should you fail to win the prize for clinical case-taking the insight into disease which you will have obtained, the practice in expressing yourself clearly which you will have acquired, will in themselves be a prize worth far more than "gold that perisheth."

The fact is that literary composition requires constant practice. May I commend to your notice a small work recently published which will put you on your guard against faults in writing. It is entitled "Notes on the Composition of Scientific Papers,"* and was written about a year ago by Dr. Clifford Allbutt, F.R.S., Regius Professor of Physic in the University of Cambridge.

The author gives some amusing examples of literary errors

* London. Macmillan & Co. 1904. Crown 8vo.

and inelegancies. "Not long ago," he tells us, "a well-known physician wrote of 'vocal fremitu'! In editorial paragraphs of smart newspapers I have lately read of 'omnibi,' and even of 'non possumi'; in a well-known book by a celebrated author we are told that 'the hands of the Scipii were nailed to the rostræ'—blunders which remind us of Frank Lockwood's jest, 'They will apply for a mandamus! Then we will apply for a brace of 'mandami.' " Here is what Dr. Allbutt calls a "loose sentence": "He was struck down by an attack of brain fever, producing acute delirium, which lasted two months, but from which he completely recovered before the autumn." One laments bitterly the sad fate of the poor hypodermic injections in this sentence: "Twenty-eight patients were treated with hypodermic injections, of which eight died." Talking of deaths, here is a grim blunder in composition culled from a statistical paper: "Of the 276 deaths, 16 had gall-stones." Take care that you arrange your words in the right order, or you may make mistakes like the following: "His memory ought to be honoured by interment in Westminster Abbey." "Erected to the memory of John Phillips, accidentally shot as a mark of affection by his brother." "I understand that when he died Cardinal Mezzofanti spoke at least fifty languages." Dr. Allbutt tells us that a candidate read to him from a thesis for the Degree in Medicine at Cambridge the sentence: "I could, when killed, discover nothing abnormal."

In concluding his interesting book, Dr. Allbutt says: "Let the student read by all means, and read widely, not to imitate individual form but to store his mind with ideas of thought and imagination, and with words in all their variety and significance. Let him converse with great authors, in poetry as well as in prose; for poetry is literature at its highest and strongest; and almost all poets—I say 'almost' to avoid contention—have written fine prose. Let him train his mind also to think and imagine continuously without fatigue, as he trains his body to endurance."

May I ask you, finally, in writing to avoid manufacturing Latin plurals of words which are not Latin, or which have meanings in Latin which differ from their English meanings. Such words as "sera," "sanatoria," "curricula," and so on, simply show an ignorance of the Latin language, and should be shunned.

We cannot all write with the noble diction and surpassing grace of Lord Macaulay, but we should strive to express our

thoughts clearly and with due observance of the rules of grammar. Mention of Macaulay's name tempts me to quote a passage from that master of English, in which he describes the death of Queen Mary from small-pox in the year 1694. He writes:—"That disease, over which science has since achieved a succession of glorious and beneficent victories, was then the most terrible of all the ministers of death. The havoc of the plague had been far more rapid; but the plague had visited our shores only once or twice within living memory; and the small-pox was always present, filling the churchyards with corpses, tormenting with constant fears all whom it had not yet stricken, leaving on those whose lives it spared the hideous traces of its power, turning the babe into a changeling at which the mother shuddered, and making the eyes and cheeks of the betrothed maiden objects of horror to the lover. Towards the end of the year 1694, this pestilence was more than usually severe. At length the infection spread to the palace, and reached the young and blooming Queen. She received the intimation of her danger with true greatness of soul. She gave orders that every lady of her bed-chamber, every maid of honour, nay, every menial servant, who had not had the small-pox should instantly leave Kensington House. She locked herself up during a short time in her closet, burned some papers, arranged others, and then calmly awaited her fate."

It is seldom that a disease receives such literary treatment as small-pox does at the hands of Lord Macaulay in the passage I have just quoted. And yet there have been and are masters of English in the ranks of the medical profession. What more graphic descriptions of disease exist than those to be met with in the works of Thomas Watson, Robert James Graves, William Stokes, James Paget, Charles Murchison or Charles Hilton Fagge—to say nothing of living medical writers? Take such men for your examples, and strain every effort in your future career to uphold the glorious traditions of Medicine as a learned as well as a beneficent profession.

Prescription-writing is also sadly neglected now-a-days. One sometimes is inclined to be angry on reading the attempts which even certain qualified practitioners make at producing a prescription in Latin. Practise prescription-writing in unabbreviated Latin if you will, but it may be better for the compounder and for the patient if the directions—or what is technically called the "signatures"—are written legibly in English: we shall

then escape such monstrosities as “Cap. coch. mag. p. cib. t. i. d.,” and the like.

During the Third Dynasty of Egypt, about the year 3500 B.C., there lived a learned physician (probably a priest of Ra, the sun-god), whose eminence was such that in the course of ages he was deified and became for later generations the special god of Medicine. In a learned Harveian Oration on Ancient Egyptian Medicine, delivered before the Royal College of Physicians of London on June 21, 1904, Dr. Richard Caton, of Liverpool, gives us the name and tells us the story of this physician of the olden time. His name is I-em-hotep, meaning “He who cometh in peace.” He is described as “the good physician of gods and men, a kind and merciful god, assuaging the sufferings of those in pain, healing the diseases of men, giving peaceful sleep to the restless and suffering.” What more splendid character for a physician can we desire! It must have been some such physician that the writer of *Ecclesiasticus* had in mind when he wrote:—“Honour a physician according to thy need of him with the honours due unto him: for verily the Lord hath created him. For from the Most High cometh healing; and from the king he shall receive a gift. The skill of the physician shall lift up his head; and in the sight of great men he shall be admired.” . . . “There is a time when in their very hands is the issue for good. For they also shall beseech the Lord, that He may prosper them in giving relief and in healing for the maintenance of life.”

It is, alas, too true that often our unsparing and self-denying efforts to save life are all in vain, and bereavement and sorrow enter, as the physician leaves, some stricken home. Yet we physicians also know what bereavement and sorrow mean—

“Lo! some we loved, the loveliest and the best
That Time and Fate of all their vintage prest.
Have drunk their cup a round or two before,
And one by one crept silently to Rest.”

—OMAR KHAYYÁM (A.D. 1123)

In this Address I have sought to teach you that Knowledge and Experience are the two pillars which support the Temple of *Æsculapius*—that is to say, the Healing Art. Seek to acquire both—

“Who loves not Knowledge? Who shall rail
Against her beauty? May she mix
With men and prosper! Who shall fix
Her pillars? Let her work prevail.”

TENNYSON. *In Memoriam*, CXIII.

Experience—here in the hospital wards you will by diligent searching find it, even at a time when the responsibility of your attendance on the sick is shared—nay, borne by your teachers. Lay fast hold on Opportunity and you will never regret it.

Standing, fellow-students, as we do on the threshold of a new Session, in my colleagues' names and my own, I bid you one and all a hearty welcome to our wards. May the coming months be a time of earnest, hearty work; and, when their sands run out, may the teachers and the taught be knit together in the silken bonds of a life-long friendship!

THE SALE OF POISONS.

BEFORE giving up his office as President of the Pharmaceutical Society of Ireland, Mr. W. F. Wells made a notable address respecting the relations between the public authorities and the Society in the administration of the law respecting the sale of poisons. The law in Ireland differs from that of Great Britain in so far as the Sale of Poisons Act is a public one, and the Pharmaceutical Society's duty is chiefly to supply the public with registered vendors of poisons. This it does through the various examinations, and Mr. Wells has conclusively proved by figures, which have not been challenged, that every district in the country has a registered man. The moral is that the Castle authorities and other Government departments should do all in their power for the integrity of the law by supporting the Society in its efforts to administer it, rather than flirt with those who, through interested motives, desire to get behind the law. So far as illegal sales of poison are concerned, the Society has every reason for complaint. The Sale of Poisons Act existed before the Society did, and the duty of the police to administer it was created by parliament. Since the law required retailers to be qualified, the Society naturally shares in the administration, but this does not entitle the police authorities to throw off their share. It is impossible for the Society, with its slight monetary resources, to carry out the work of inspection without police aid. Mr. Wells has therefore given a forcible exposition of the whole case, which should be considered by the Castle authorities. It will be observed that Mr. Wells has again retired from the Presidency of the Pharmaceutical Society, Dr. Walsh having been appointed to succeed him in the chair. Mr. Wells has done excellent service for the Society, and as he is a man who works as well out of office as in it this is not an instance where adieu would be appropriate.—*Chemist and Druggist*, Oct. 7, 1905.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by the EDITOR.

VITAL STATISTICS

For four weeks ending Saturday, October 7, 1905.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending October 7, 1905, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 18.1 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,959. The deaths registered in each of the four weeks ended Saturday, October 7, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality.

TOWNS, &c.	Week ending				Aver- age Rate for 4 weeks	TOWNS, &c.	Week ending				Aver- age Rate for 4 weeks
	Sept. 16	Sept. 23	Sept. 30	Oct. 7			Sept. 16	Sept. 23	Sept. 30	Oct. 7	
22 Town Districts	17.2	15.8	19.1	18.1	17.6	Lisburn -	13.6	4.5	18.2	9.1	11.4
Armagh -	13.7	13.7	13.7	20.6	15.4	Londonderry	18.6	21.1	21.8	17.4	20.5
Ballymena	9.6	14.4	9.6	9.6	10.8	Lurgan -	17.7	26.6	17.7	26.6	22.1
Belfast -	16.6	13.7	15.8	16.9	15.8	Newry -	-	21.0	21.0	37.8	19.9
Clonmel -	15.4	5.1	20.5	15.4	14.1	Newtown- ards	28.6	17.2	17.2	11.4	18.6
Cork -	19.9	17.8	22.6	18.5	19.7	Portadown -	15.5	-	5.2	36.2	14.2
Drogheda -	8.2	12.3	8.2	20.4	12.3	Queenstown	19.8	13.2	26.4	6.6	16.5
Dublin - (Reg. Area)	16.2	17.9	22.3	19.8	19.0	Sligo -	24.0	24.0	14.4	14.4	19.2
Dundalk -	12.0	8.0	12.0	16.0	12.0	Tralee -	10.6	10.6	52.8	-	18.5
Galway -	35.0	7.8	23.3	11.7	19.4	Waterford -	21.4	23.4	19.5	29.2	23.4
Kilkenny -	34.3	24.6	14.7	9.8	20.8	Wexford -	18.7	23.3	9.3	14.0	16.3
Limerick -	23.2	8.2	12.3	10.9	13.7						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, October 7, 1905, were equal to an annual rate of 0.8 per 1,000, the rates varying from 0.0 in fourteen of the districts to 5.2 in Portadown. Among the 116 deaths from all causes in Belfast are one from diphtheria and 5 from diarrhoeal diseases; and the 27 deaths from all causes in Cork include one from diphtheria and one from pyrexia (origin uncertain).

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended October 7 amounted to 189—94 boys and 95 girls; and the deaths to 158—83 males and 75 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 21.7 in every 1,000 of the population. Omitting the deaths (numbering 14) of persons admitted into public institutions from localities outside the area, the rate was 19.8 per 1,000. During the forty weeks ending with Saturday, October 7, the death-rate averaged 22.5, and was 3.3 below the mean rate for the corresponding portions of the ten years 1895–1904.

The registered deaths (158) include 2 from enteric fever and one death from *diarrhœa*. The weekly mean of the earth temperature at 4 feet was 53.9°. In the 3 weekly periods which preceded that under notice, deaths from diarrhoeal diseases were 10, 10, and 9, and deaths from enteric fever were one, 2, and 2, respectively. The deaths of 3 infants under one year of age were attributed to *gastro-enteritis*. One death was due to influenza, and tetanus caused one death.

One death was due to lobar pneumonia, 4 deaths were due to broncho-pneumonia, and there were 5 deaths from *pneumonia* (undefined).

Of 42 deaths caused by tuberculous disease there were 4 from tubercular phthisis, 21 from *phthisis*, 6 from tubercular

meningitis, one from tubercular peritonitis, and 10 deaths from other forms of the disease. The total deaths from tuberculous disease registered in the 3 weeks preceding were 27, 36, and 33, respectively.

Seven deaths were attributed to carcinoma, and 4 to cancer (undefined).

The deaths of 7 infants, prematurely born, were recorded.

The 12 deaths from diseases of the brain and nervous system include the deaths of 5 infants under one year of age from *convulsions*.

There were 18 deaths from diseases of the heart and blood vessels.

Ten deaths were caused by bronchitis.

Two deaths were due to accidental circumstances.

In 5 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases comprise the deaths of 3 children under one year of age and the deaths of 2 persons aged 60 years and upwards.

Forty-four of the persons whose deaths were registered during the week ended October 7 were under 5 years of age (33 being infants under one year, of whom 13 were under one month old) and 38 were aged 60 years and upwards, including 15 persons aged 70 and upwards, of whom 7 were octogenarians, and 2 (women) were stated to have been aged 93 and 106 years, respectively.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious disease notified under the "Infectious Diseases (Notification) Act, 1899," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended October 7, 1905, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epi- demic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping cough	Cerebro-spinal Fever	Total
City of Dublin	Sept. 16	-	•	•	10	-	-	5	-	13	25	17	-	•	•	•	•
	Sept. 23	-	•	•	14	-	-	1	-	1	18	19	-	•	•	•	51
	Sept. 30	-	•	•	13	-	-	2	-	8	21	7	1	•	•	•	53
	Oct. 7	-	•	•	5	-	-	4	-	2	14	8	-	•	•	•	31
Rathmines and Rathgar Urban District	Sept. 16	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
	Sept. 23	-	•	•	1	-	-	-	-	-	-	-	-	•	•	•	1
	Sept. 30	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
	Oct. 7	-	•	•	-	-	-	-	-	-	1	-	-	•	•	•	1
Pembroke Urban District	Sept. 16	-	-	-	-	-	-	-	-	-	-	-	-	•	2	-	2
	Sept. 23	-	-	-	-	-	-	-	-	1	-	-	-	•	-	-	1
	Sept. 30	-	-	-	1	-	-	-	-	1	2	-	-	•	-	-	4
	Oct. 7	-	-	-	2	-	-	-	-	-	-	-	-	•	-	-	2
Blackrock Urban District	Sept. 16	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
	Sept. 23	-	•	•	-	-	-	-	-	-	1	-	-	•	•	•	1
	Sept. 30	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
	Oct. 7	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
Kingstown Urban District	Sept. 16	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
	Sept. 23	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
	Sept. 30	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
	Oct. 7	-	•	•	-	-	-	1	-	-	1	-	-	•	•	•	3
City of Belfast	Sept. 16	-	•	•	24	-	-	3	-	13	24	7	-	•	•	•	51
	Sept. 23	-	•	•	14	-	-	5	-	11	22	9	1	•	•	•	53
	Sept. 30	-	•	•	8	-	-	4	1	7	14	8	-	•	•	•	33
	Oct. 7	-	•	•	15	-	-	4	1	11	15	5	-	•	•	•	51

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended October 7, 1905, three cases of measles were admitted to hospital, 2 were discharged, and 4 patients remained under treatment at its close.

Six cases of scarlet fever were admitted to hospital, 7 were discharged, and 44 cases remained under treatment at the close of the week. This number is exclusive of 20 convalescents who remained under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital.

One case of typhus remained under treatment at the close of the week.

Six cases of diphtheria were admitted to hospital, 6 were discharged, and 28 patients remained under treatment at the close of the week.

Ten cases of enteric fever were admitted to hospital, 7 were discharged, and 85 cases remained under treatment in hospital at the end of the week.

In addition to the above-named diseases, 10 cases of pneumonia were admitted to hospital, 2 were discharged, and 23 cases remained under treatment at the close of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended October 7, in 76 large English towns, including London (in which the rate was 13.2), was equal to an average annual death-rate of 13.5 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 14.9 per 1,000, the rate for Glasgow being 15.1, and for Edinburgh 15.2.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of September, 1905.

Mean Height of Barometer,	-	-	29.974 inches.
Maximal Height of Barometer (17th, at 9 a.m.),			30.394 „
Minimal Height of Barometer (7th, at 9 a.m.),			29.219 „
Mean Dry-bulb Temperature,	-	-	53.7°
Mean Wet-bulb Temperature,	-	-	51.2°.
Mean Dew-point Temperature,	-	-	48.7°.
Mean Elastic Force (Tension) of Aqueous Vapour,			.346 inch.
Mean Humidity,	-	-	83.6 per cent.
Highest Temperature in Shade (on 4th),	-		68.1°.
Lowest Temperature in Shade (on 26th),	-		38.5°.
Lowest Temperature on Grass (Radiation) (15th)			34.1°.
Mean Amount of Cloud,	-	-	56.0 per cent.
Rainfall (on 14 days),	-	-	1.225 inches.
Greatest Daily Rainfall (on 27th),	-	-	.359 inch.
General Directions of Wind,	-	-	W., S.W., N.E.

Remarks.

A favourable, but cool, month. There was a warm period at the beginning, lasting to the 7th, and S.W. winds were also in evidence at that time. But the remainder of the month was cool, the nights being often especially sharp, and winds from polar quarters were constant. Some heavy local showers on

the 24th and 27th and 28th disturbed the distribution of rainfall in the Dublin district. The duration of bright sunshine was estimated at 134.5 hours, equal to a daily mean of 4.5 hours compared with a twenty years' mean of 143.4 hours recorded at the Ordnance Survey Office, Phoenix Park, or 38 per cent. of the possible duration. The prevalent winds were W., S.W., and N.E.

In Dublin the arithmetical mean temperature (54.9°) was 1.0° below the average (55.9°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 53.7° . In the forty years ending with 1904, September was coldest in 1886 and 1892 (M. T. = 53.0°), and warmest in 1865 (M. T. = 61.4°) and 1898 (M. T. = 60.2°). In 1904 the M. T. was 56.8° .

The mean height of the barometer was 29.974 inches, or 0.064 inch above the corrected average value for September—namely, 29.910 inches. The mercury rose to 30.394 inches at 9 a.m. of the 17th, and fell to 29.219 inches at 9 a.m. of the 7th. The observed range of atmospheric pressure was, therefore, 1.175 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 53.7° , or 3.7° below the value for August, 1905. Using the formula, *Mean Temp.* = *Min.* \times (*Max.* — *Min.* \times .476), the mean temperature was 54.6° , or 1.0° below the average mean temperature for September, calculated in the same way, in the thirty years, 1871–1900, inclusive (55.6°). The arithmetical mean of the maximal and minimal readings was 54.9° , compared with a thirty years' average of 55.9° . On the 4th the thermometer in the screen rose to 68.1° —wind, S.W.; on the 26th the temperature fell to 38.5° —wind, W. The minimum on the grass was 34.1° on the 15th.

The rainfall was 1.225 inches on 14 days. The average rainfall for September in the thirty-five years, 1866–1900, inclusive, was 2.220 inches, and the average number of rainy days was 15. In 1871 the rainfall was very large—4.048 inches on, however, only 13 days; in 1896 no less than 5.073 inches fell on 23 days, establishing a record rainfall for September. On the other hand, in 1865, only .056 inch was measured on but 3 days. In 1904, 2.339 inches fell on 17 days.

High winds were noted on 13 days, but attained the force of a gale on the 7th and 8th alone. The atmosphere was foggy on the 20th, 21st, and 26th. Solar halos were observed on the 5th, 22nd, 24th, and 26th.

The rainfall in Dublin during the nine months ending September 30th amounted to 19.266 inches on 145 days, compared with 19.147 inches on 152 days in 1904, 25.269 inches on 174 days in 1903, 21.425 inches on 149 days in 1902, 18.070 inches on 124 days in 1901, 24.394 inches on 156 days in 1900, 20.948 inches on 138 days in 1899, only 10.968 inches on 112 days in 1887, and a thirty-five years' average of 19.880 inches on 145 days.

At the Normal Climatological Station in Trinity College, Dublin, the mean height of the barometer was 29.976 inches, the range of atmospheric pressure being from 29.221 inches at 9 a.m. of the 7th to 30.393 inches at 9 a.m. of the 17th. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 54.9°. The arithmetical mean of the daily maximal and minimal temperature was 54.8°. The screened thermometers rose to 69.4° on the 4th, and fell to 38.8° on the 26th. On the 27th the grass minimum was 29.8°. On the 6th the black bulb *in vacuo* rose to 126.3°. Rain fell on 13 days to the amount of 1.148 inches, the greatest fall in 24 hours being .258 inch on the 24th. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 120.4 hours, of which 9.1 hours occurred on the 7th. The mean earth temperatures were—at 1 ft., 55.7°; at 4 ft., 56.1°. The one-foot thermometer ranged from 59.9° on the 5th to 52.4° on the 27th. The four-feet thermometer ranged from 57.5° on the 7th to 54.2° on the 29th and 30th.

At 21 Leeson Park, Dublin, Dr. Christopher Joynt, F.R.C.P.I., registered 1.185 inches of rain on 13 days, the greatest fall in 24 hours being .330 inch on the 27th.

Mr. R. Cathcart Dobbs, J.P., reports that at Knockdolian, Greystones, Co. Wicklow, the rainfall was 1.055 inches on 10 days, compared with 2.880 inches on 12 days in 1904, 3.950 inches on 20 days in 1903, 3.995 inches on 12 days in 1902, 5.420 inches on 19 days in 1901, and only .695 inch on but 4 days in 1900. The heaviest fall in 24 hours was .300 inch on the 8th. At Knockdolian the rainfall since January 1st, 1905, has been 22.113 inches on 120 days, compared with 21.457 inches on 141 days in 1904, 27.050 inches on 154 days in 1903, 27.156 inches on 123 days in 1902, 25.105 inches on 119 days in 1901, 30.021 inches on 140 days in 1900, 28.440 inches on 139 days in 1899, and 19.688 inches on 124 days in 1898.

Dr. Arthur S. Goff returns the rainfall at Lynton, Dundrum, Co. Dublin, at 1.07 inches on 15 days, compared with 5.03 inches on 18 days in 1901, 4.09 inches on 19 days in 1902, 4.33 inches on 21 days in 1903, and 2.94 inches on 19 days in 1904. The greatest daily fall was .25 inch on the 8th. The mean temperature in the shade was 54.9° , compared with 55.3° in September, 1903, and 56.2° in 1904. The screened thermometers rose to 75° on the 4th and 5th, and fell to 41.0° on the 11th.

Miss Muriel E. O'Sullivan reports that at Whitecross, Stillorgan, Co. Dublin, only .853 inch of rain fell on 13 days, of which small amount nearly one-half (.421 inch) was measured on the 27th.

Dr. B. H. Steede reports that at the Royal National Hospital, Newcastle, Co. Wicklow, the rainfall amounted to 1.133 inches on 13 days, .216 inch falling on the 4th. The maximal temperature in the shade was 69.0° on the 4th, the minimum was 38.2° on the 15th. Since January 1, rain has fallen on 128 days to the amount of 23.432 inches.

Mr. T. Bateman reports that the rainfall at the Green, Malahide, Co. Dublin, was 1.038 inches on 11 days, the greatest fall in 24 hours being .205 inch on the 27th. The mean shade temperature was 53.8° , the extremes being—highest, 69° on the 5th; lowest, 37° on the 26th.

The Rev. Arthur Wilson, M.A., returns the rainfall at the Rectory, Dunmanway, Co. Cork, at 3.465 inches on 16 days, the heaviest fall in 24 hours being .715 inch on the 8th.

Mr. Wm. Miller states that in the City of Cork the rainfall was 1.35 inches on 11 days, or 1.35 inches below the average for September. The rainfall was greatest on the 8th, when 0.32 inch was measured. In the 9 months ended September 30, the rainfall was 28.13 inches, or 1.74 inches above the average, but 1.62 inches less than in the corresponding period of 1904. The rainy days in 1905 have so far been 142, or 4 above the average.

The rainfall recorded at the Ordnance Survey Office, Phoenix Park, was 1.165 inches on 13 days, the greatest measurement in 24 hours being .270 inch on the 27th. The total amount of sunshine at this station was 122.6 hours, the most registered on any one day being 9.8 hours on the 9th.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 56.0° , being 0.9° below the average for September during 18 previous years (1873–80 and 1898–1904),

the extremes being—highest, 70.7° on the 4th; lowest, 40.5° on the 15th. At Bournemouth the mean was 56.7° , the extremes being—highest, 75° on the 4th; lowest, 40° on the 27th. The mean daily range of temperature was 10.3° ; at Bournemouth it was 15.3° . The mean temperature of the sea at Sandycove bathing place was 56° , being 1.2° below the average for the month during the previous 7 years. The relative humidity was 76 per cent., being 1 per cent. below the average for the month during the previous 4 years. The rainfall was 0.85 inch on 10 days, being 1.61 inches below the average for the month during 15 previous years (1873–83 and 1901–04), the greatest fall for any 24 hours being 0.36 inch on the 28th. The rainfall at Kingstown for the past 9 months amounted to 18.98 inches, being 1.32 inch below the average for the corresponding 9 months during 15 previous years. The rainfall at Bournemouth was 2.08 inches on 14 days. The duration of bright sunshine was 131.5 hours compared with 122.6 hours at the Ordnance Survey Office, Phoenix Park, 94.6 hours at Valentia, 113.9 hours at Birr Castle, 113.3 hours at Southport, and 118.8 hours at Hastings.

Mr. Robert O'B. Furlong, C.B., reports that the rainfall at Cloneevin, Killiney, Co. Dublin, was only .79 inch on 10 days, compared with an average for September of 2.148 inches on 13.5 days in the twenty years 1885–1904. The greatest fall in 24 hours was .25 inch on the 27th. There was absolute drought from the 13th to the 26th, both days included. The rainfall in September at this station had been lower in 1903 (.46 inch on 11 days), 1888 (.58 inch on 7 days), 1894 (.70 inch on 5 days), 1900 (.70 inch on 8 days), and 1889 (.77 inch on 11 days). In 1905 the total rainfall to September 30 amounts to 21.09 inches on 132 days.

PERISCOPE.

THE PREVENTIVE TREATMENT OF SMALL-POX IN GERMANY AND IN ENGLAND.

FROM the Thirty-third Annual Report of the Local Government Board for England (1903-04) we learn that the German nation is able to dispense with separate small-pox hospitals altogether through the agency of compulsory vaccination and re-vaccination. The machinery, preventive and other, for dealing with small-pox in Germany comprises:—(a) Under the German vaccination Law of April 8, 1874, compulsory vaccination of all infants before the end of the calendar year next succeeding that of their birth; and compulsory re-vaccination of all children in their twelfth year; compliance of parents with the above requirements as to vaccination and re-vaccination being enforced by fine or imprisonment. (b) Notification of all cases of small-pox. (c) Powers to isolate in hospital cases of small-pox or of suspected small-pox. (d) Vaccination or re-vaccination of the “contacts” in small-pox invaded houses, and, in some towns, isolation of such contacts. With reference to measures of isolation, Dr. Low found that, save in rare instances, there exist in Germany no specially provided small-pox hospitals; that, owing to the system of vaccination and re-vaccination there in force, the demand made by small-pox upon isolation accommodation is so trivial that in the majority of places one of the pavilions of the “General Diseases Hospital” within the town has sufficed in all ways for dealing with small-pox emergencies. The following is an extract from the memorandum of the Local Government Board for England “On the provision of Isolation Hospital accommodation by Local Authorities” (1902):—“*Hospitals for small-pox.*—In view of the frequently demonstrated liability of small-pox hospitals to disseminate that disease to neighbouring communities, and in order to lessen the risk of such occurrence, the Board require the following conditions to be complied with in the case of small-pox hospitals provided by means of loans sanctioned by them:—

1. The site must not have within a quarter of a mile of it either a hospital, whether for infectious diseases or not, or a workhouse, asylum, or any similar establishment, or a population of as many as 200 persons.
2. The site must not have within half a mile of

it a population of as many as 600 persons, whether in one or more institutions, or in dwelling-houses. 3. Even where the above conditions are fulfilled, a hospital must not be used at one and the same time for the reception of cases of small-pox and of any other class of disease.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH, ROYAL COLLEGE OF SURGEONS OF EDINBURGH AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

THE following gentlemen, having passed the requisite examinations of the Conjoint Board, were admitted Diplomates in Public Health :—Harold Sherman Ballantyne, M.B., C.M., Eskbank ; Leo Ferdinando Bianchi, M.R.C.P.E., Portobello ; John Jardine, M.B., Ch.B., Penicuik ; Philip Anthony Harry, M.B., Ch.B., Edinburgh ; Richard Caldecott Monnington, M.B., Ch.B., Broughton-in-Furness ; François Leon Keisler, L.R.C.P. & S.E., Edinburgh ; Kenneth Andrew Moody-Stuart, M.B., Ch.B., Errol ; Robert Abraham Logan van Someren, M.B., Ch.B., Edinburgh ; Mohamed Ebrahim Sufi, L.R.C.P. & S.E., Edinburgh ; Joseph William Sutton, L.R.C.P. & S.E., Newport ; David Llewelyn Williams, F.R.C.S.E., Colwyn Bay ; Robert Allan Cunningham, M.B., Ch.B., Co. Donegal ; Alexander James MacGregor, M.D., Dunfermline ; and George Wight, M.B., Ch.B., Grantshouse. At the same Sederunt the following gentlemen passed the first Examination in Public Health :—William Hamilton Simpson, M.B., Ch.B., New Zealand ; David Robertson Dobie, M.D., Crieff ; Jamshijd Dadabhai Munsiff, L.R.C.P. & S.E., Edinburgh, and Francis Edmond Larkins, M.B., Ch.B., Edinburgh.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Pleated Compressed Bandages and Dressings.

MANY of the principles which have obtained a deserved reputation for other products of Burroughs, Wellcome, & Co., are embodied in the pleated compressed bandages and dressings now issued under the "Tabloid" brand. The material of which they are composed, and the antiseptics employed in the medicated dressings, are of the finest quality. The medicament is evenly distributed throughout, and the fine texture of the fabric is uninjured in the process. To the general practitioner espec-

ally, whose surgical or obstetric bag is cumbered with the large packets of cotton wool and lint and the loosely rolled bandages such as have hitherto been available, these compressed goods will be a great boon. Their compactness and shape enable him to carry in a minimum of space all the necessary dressings in a day's routine practice; indeed, the requisites can easily be stored in a coat pocket. The various gauzes will be found satisfactory as drains, for packing cavities, or for covering wounds, whilst the medicated lint and wool ensure that antisepsis is maintained. In the country, and in emergency cases, these new products should quickly establish their popularity, for their superiority over the ordinary preparation is unquestionable, and their advantages are obvious. The bandages and dressings are pleated, and this permits them to be easily unfolded. Their covering of parchment paper, and outer wrapping of tinfoil, keep them free from contamination. The following is a list of pleated compressed bandages and dressings of the "Tabloid" brand:—

Pleated Bandages—

Open Wove, $2\frac{1}{2}$ in. by 6 yards	..	Packages of 1 doz.
Flannel, $2\frac{1}{2}$ in. by 5 yards	..	.. $\frac{1}{2}$ doz.
Triangular	..	.. 2 bandages.

Pleated Cotton Wool—

Absorbent, 2 ounce packets	..	Packages of 1 doz.
Double Cyanide, $3^{\circ}/_{\circ}$, 1 ounce packets	..	.. 1 doz.
Boric, 2 ounce packets	..	.. 1 doz.

Pleated Gauze—

Double Cyanide, $3^{\circ}/_{\circ}$, 3 yards	..	Packages of 1 doz.
Sal Alembroth, $1^{\circ}/_{\circ}$, 3 yards	..	.. 1 doz.
Boric, 3 yards	..	.. 1 doz.

Pleated Lint—

Plain, 2 ounce packets	..	Packages of 1 doz.
Boric, $40-45^{\circ}/_{\circ}$, 2 ounce packets	..	.. 1 doz.
Carbolised, 1 ounce packets 1 doz.

Pleated Tow—

Carbolised, 2 ounce packets	..	Packages of 1 doz.
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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

DECEMBER 1, 1905.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XVII.—*The Conjunction of Clinical and Pathological Work in Medicine.*^a By JOSEPH F. O'CARROLL, M.D. R.U.I; F.R.C.P.I.; Physician to the Richmond, Whitworth, and Hardwicke Hospitals, Dublin; President of the Section of Pathology in the Royal Academy of Medicine in Ireland.

It was with considerable surprise and much misgiving that I learned that the Council of the Pathological Section had nominated me for the post of President for this Session, for I could not but recognise the fact that for a considerable time past I had done very little work in this Section, and that at no time had I any claim to consideration as a pathologist. I trust that my occupation of the Chair may not be signalised by any falling off in the work of the distinguished pathologists who have preceded me in the Chair, for then of a surety your more than seven years of plenty would be followed by years of famine, and the decline of this Section would date from the year in which you were unfortunate enough to have a mere clinician as your President.

^a The Presidential Address to the Section of Pathology in the Royal Academy of Medicine in Ireland, delivered on Friday, October 27, 1905.

But now I shall take courage to say a word, not for myself, but for the conjunction of clinical and pathological work in medicine. On the analogy of the late Mr. Lecky's book of practical ethics, which he entitled "The Map of Life," pathology, as taught up to a few years ago, might have been styled "the Map of Death." The appearances of dead organs and dead cells formed practically the whole matter of the ordinary text-book—dead organs, wholesale or in microscopic retail, formed almost the sole objects of discussion at meetings like this. And clinical medicine reflected this sombre hue, for it divided diseases into those which had a pathological basis of progressive and fatal degeneration, and those of which pathology could as yet say nothing, and which, therefore, presented a fair field for the more or less complacent therapist. I know not which was the more melancholy spectacle: hopelessness founded on very partial knowledge, or confidence built on irrational guess-work. If we are in a better position to-day I believe it to be due to the closer collaboration of the pathologist and the clinician in the investigation of the living subject. The pathologist, no longer confined to the *post-mortem* room, has come into the hospital ward with advantage to himself and to the clinician.

Surveying our pathological gains of the last few years, one is astonished at the sudden expansion of our knowledge. Pathology is no longer a map of death; it has become a part of that large map of life known commonly as biology. It is now to normal biology what a marine chart is to a land map— a guide to rocks and currents and fateful shoals, but also to navigable channels and hospitable shores of hope. In proportion as it has assumed its rightful place as a part of biology its importance and scope have increased. The study of the living cell, vegetable and animal, has revealed mysteries of function which could never have been discovered by the study of organs as a whole. Bacteriology, which primarily at least is the study of the smallest individual cell, has established for biology what sociology had already realised as occurring in human communities—namely, that living organisms in

their relations to one another are in a perpetual state of action and reaction, attack and defence, intoxication and counter-intoxication, or antidosis. And this interaction occurs not merely between organisms of different species, such as the typhoid bacillus on the one hand, and the human body on the other, but in the multicellular organisms between one set of cells and another; and in the higher animals between more or less complementary or opposing cells of individual organs. Thus in the human body, for instance, some of the cells of the pancreas appear to be occupied in producing a sugar-making ferment, while others are throwing into the blood what I may, for convenience, call a sugar-unmaking, or precipitating ferment. The chemical result is, perhaps, comparable to the well-known agglutination phenomenon. The failure of the double function of the pancreas leads to one form of glycosuria. The liver presents another example of the same kind, and the gastric defence against its own secretion is probably the result of a similar process. These are not functions of an organ as a whole; they are the vital phenomena of cells forced to live in close neighbourhood and acting on the "give-and-take" principle necessary in such close association. The phenomena are not the disorderly accidents of the crowd, but characters and functions of the community.

It may be objected that I am discussing conditions of health, not of disease, and that the latter alone is within the purview of pathology. But for the most part, I contend, the processes of disease are the processes of normal life exaggerated into unusual prominence. They are never the reversal of the normal. In most communities there is an orderly, law-abiding element and an ill-controlled rowdy element, whether native or imported. The former creates a police force to keep the latter in order. I conceive disease to be an effervescence of the rowdy element, which is more or less promptly and more or less effectively met by an increase of the police force. The social process is the same and continuous in time of peace and in time of turmoil—emergency only makes it more active and more visible. In similar wise a defensive

process is continuously at work against the diphtheria bacillus, whether lurking invisible in the nurse's or the doctor's mouth or garotting the helpless child. The defence against the tubercle bacillus is no less continuous; is, in fact, much more continuous and effective in those of us who have no signs of tuberculosis than in those in whom it has got the upper hand. The establishment of the disease— if I may be permitted to vary my comparison a little—is merely the transition from a battle into a running fight.

Apart altogether from the microbic infections, many of the processes which we are inclined to think of as abnormal are merely unusual or disproportionate examples of the normal. The absorption of a buried catgut suture is not essentially different from the gastric digestion of a beef-steak. Both processes exemplify the sensitiveness of living healthy cells, not to foreign bodies as we used to say, but to antipathetic chemical elements in their neighbourhood. That the gastric cell works somewhat differently from the undifferentiated tissue leucocyte is due to the fact that it has sacrificed to some extent its individual motility for the great gain of the cumulative and highly co-ordinated action of the community in which it is a unit. The high development of the gastric community, intimately associated as it is with the nervous system, is not more evident in its co-ordination for secretion than in its co-ordination for inhibition of secretion. This latter I conceive to be, at least in part, the key to the diminution or absence of hydrochloric acid and the occurrence of lactic acid in gastric cancer. The mineral acid would be objectionable in the presence of a degeneration lending itself so readily to erosion and ulceration. And so there is inhibition of hydrochloric acid secretion, while the organisms productive of lactic acid are allowed to pullulate, lactic acid being to a certain extent capable of aiding digestion and somewhat effective in preventing putrefaction of the food. This may seem fanciful, and is certainly not the whole story—we shall never know the whole story of nature. But it is at least helpful in comprehending the cases in which hydrochloric

acid is absent long before any large extent of the mucosa is involved in the new growth. And the hint given by Nature in this and similar cases has led to the recognition of the value of lactic acid in many digestive disturbances - notably in the green diarrhœa of children. The yeasty fermentation so characteristic in organic dilatation of the stomach is to be regarded not as part of the disease but as part of the resistance to the disease, being a mode of digestion of higher order than mere putrefaction and inhibitive thereof.

Passing from individual cells and individual organs to the body as a whole, we find the same or analogous modes of resistance to disturbance of the average or normal condition; and here again phenomena frequently attributed to the disease are really acts of defence against disease. Nothing is more wonderful in the course of a long and wasting illness than the persistence with which the heart keeps on at its apparently thankless task long after all the higher nervous system has all but died. Yet how frequently is this dogged resistance to annihilation on the part of the heart noted as a symptom of the disease, while the surrender of the other organs is ignored. I know no phrase more erroneous or more harmful in such cases than the expression "heart failure." True, a man eventually dies when his heart stops beating, but, special diseases of the organ apart, the heart in most diseases, and especially in infectious, is the *ultimum moriens*. In typhus fever, in which it was formerly the fashion to drench the patient with alcohol "to keep the heart going," the digestive system, the urinary system, the nervous system, all fail before the cardio-respiratory mechanism gives up. I am speaking, of course, of a patient who receives the infection while all his organs are healthy. His heart is the very last organ to yield. Or to put the case otherwise, the man who goes safely through a severe typhus fever does so because the cardio-vascular system conquers or outlives the infective agent. The same persevering defence by this system is exhibited in almost every acute disease, and the danger of an early or frequent administration of alcohol is comparable to the indiscretion of spurring a willing

horse in the early part of a long journey. In my opinion, failure of a previously healthy heart is never, or hardly ever, the cause of death in acute disease, and I cannot but think that its appearance in a certificate as the proximate cause of death is nothing more than a statement that death ensued when the heart stopped—a statement which ignores the fact that every other part of the patient had died or gone into abeyance before the heart showed any marked failure. In primary heart disease the accommodative power of the body is little short of marvellous. Apart from hypertrophy of the heart itself and compensatory changes in its rate, there are various devices by which the load on the heart is lightened. Thus the less essential or watery part of the blood is deposited or retained here and there as effusions, or the patient gets thinner, and, therefore, as it were, the vascular mileage is reduced; or, finally—a phenomenon which is especially interesting—the total quantity of blood becomes reduced, a true anæmia occurring; so that the gross tonnage carried is diminished. These changes, no doubt, come more frequently under the notice of the clinician than of the pathologist; they are none the less organic changes incidental to the disease. But they compensate, not aggravate, it.

These are, I fear, very commonplace considerations, and I must ask your pardon. My idea has been to show how close is the bond between clinical and pathological work, and how much closer it must be in the future than it has been in the past. I have tried to indicate how far the pathology of to-day is from being the science merely of decay and death, and what a considerable part of biology it promises to become. I need not point out to you what large vistas of hope it has opened out for the prevention and cure of disease. Whether or no any particular light in the distance signify a haven of rest or a will-o'-the-wisp, we are perfectly confident that some lights are true and that we are ever moving towards the dawn.

From these somewhat trite generalities let me, in conclusion, descend to the consideration of a concrete question in medical education. It is this—Ought not the subject of biology, which forms an early part of the curriculum.

to be really the biology of the cell, animal and vegetable, and of the simpler animal and vegetable organisms? The amount of botany which the average student learns is, I suspect, minimal in quantity, and certainly not enough to be of any use to him in the subsequent stages of his professional training. The general structure of vertebrates can certainly be as well learned in two or three years of human dissection as in a few hours' examination of a rabbit. On the other hand, some study of the protozoa, the microscopic anatomy of simple vegetable tissues, some work with cultures of commonplace and innocent micro-organisms, would interest the student by introducing him to a world of which he had not hitherto dreamed, and to conceptions which lie at the foundation of all his after-studies; conceptions which at present become vital in his mind only towards the end of his course, if, indeed, in the majority they ever take life at all. This is a reform which I hope to see effected before long.

ART. XVIII.—*A Case of Melanuria.** By T. GILLMAN
MOORHEAD, Physician, Royal [City of Dublin] Hospital.
[Illustrated.]

THE passage of extremely dark coloured or black urine, or of urine which darkens after exposure to air, is an event of no unusual rarity, and may be the product of many pathological conditions. Of such urines some are of comparatively frequent occurrence, as, for example, that found in cases of prolonged jaundice, while others are only occasionally met with, and to this class belongs the variety of urine to which the term “melanuria” *par excellence* has been applied. The following case presented during life this interesting symptom:—

A. N., aged thirty, by occupation a housekeeper, unmarried, was admitted to hospital on October 13th, 1905, complaining of swelling of her abdomen and feet.

Previous History.—The patient stated that she had always enjoyed good health until two months previously, except that she had noticed some defect of vision in her left eye as long ago

* Read before the Section of Pathology in the Royal Academy of Medicine in Ireland on Friday, November 24, 1905.

as 1897. In that year she had attended as an out-patient at an ophthalmic hospital, and had been advised to have the eye removed. She however refused, and did not return to the hospital for four years, when she was again urged to permit removal of the eye, but again refused. Finally, in July of 1905, she consented to its removal, owing to the fact that it had become rather disfiguring. The operation was performed, and a typical melanotic sarcoma, involving the whole of the eyeball, but not encroaching upon the other orbital structures, was removed. While in hospital she suffered once or twice from abdominal pain and vomiting, which, however, quickly passed off, and was not of sufficient severity to attract notice. Early in August she began to notice that she was losing flesh, and about the beginning of September first observed that her abdomen and feet had begun to swell. Her periods had been quite regular up to July, but had ceased since that month.

On admission the patient was found to be greatly emaciated: her weight was eight stone and three pounds; her face was drawn and rather yellow-looking; the scar in the orbit was quite healthy and normal in appearance, and the right eye was quite healthy. The chest muscles were very atrophic; heart normal; the lungs exhibited râles and rhonchi over almost their entire extent, both back and front, but showed nothing abnormal to percussion. The abdomen was enormously distended, the superficial veins standing out quite prominently and presenting a flow from below upwards, and the skin was thin and glossy. On palpation hard nodules of about the size of a walnut could be distinctly felt all over the upper two-thirds of the abdomen, and even extending downwards into the iliac fossæ on both sides. These nodules could be felt, and even at times seen to move, under the abdominal wall with respiration. Intervening between them and the wall, however, there was a thin layer of fluid, which fluctuated freely, and which could be displaced readily by gentle pressure. This layer of fluid was most noticable over the right side, and extended upwards to the level of the ribs. It only moved slightly with change of posture. On percussion the abdomen was found to be dull over its anterior aspect, from the costal margin down to below the level of the iliac spines on each side, except for a transverse area of resonance a couple of inches above the level of the umbilicus. The flanks were resonant on each side in every position, and even on sitting up; there was no dulness above the symphysis pubis. The lower edge of the liver

DR. T. GILLMAN MOORHEAD on "A Case of Melanuria."

Under-surface of Liver, showing Cyst-like Melanotic Tumours.

could not be distinctly defined either by feel or by percussion ; the spleen dulness appeared normal in extent. By vaginal examination some indistinct fluctuating masses were felt, but no definite diagnosis as to what they were was arrived at. There was considerable œdema over the lumbar region and in the legs. Temperature normal ; pulse 80 ; respirations 24.

Blood Examination.—Red blood corpuscles, 3,000,000 per c.m. ; white cells, 12,000 per c.m.

Differential Count.—Neutrophiles, 76 per cent. ; lymphocytes, 19 per cent. ; hyaline cells, 4.5 per cent. ; eosinophile cells, .5 per cent.

The blood when tested for melanin gave a negative result, and no melanotic granules were present, such as have occasionally been described.

Shortly after admission the amount of fluid in the abdomen increased greatly, and had to be removed, 80 ounces being withdrawn on October 16th. The ascitic fluid contained a large quantity of blood, but failed on this and on other occasions to give any melanin reactions. A few days before the patient's death 40 ounces of fluid were again removed, and presented similar characters to those of what was first drawn off. The blood picture underwent a gradual change, the leucocytosis gradually increasing up to 35,000 per c.m., with a count of neutrophiles up to 87 per cent., while a few myelocytes, both granular and hyaline, made their appearance. The red cells sank to just under 1,500,000 per c.m., and a few nucleated red cells (normoblasts, some of which contained dividing nuclei) were found. Death occurred from asthenia on October 26th.

Post-mortem—Only a partial examination was permitted, and consequently it was impossible to examine the stumps of the left optic nerve, the brain, spinal cord, or joints.

The lungs were somewhat œdematous. were very anæmic, and were studded over the surface with a few small melanotic growths. The heart was normal, except for one small tumour situated in the anterior wall of the left ventricle. The liver was enormous, weighing thirteen and a quarter pounds, and extending right down over both iliac fossæ. Its whole substance was infiltrated with black tumours, varying in size from that of a pea to that of a Tangerine orange. Many of them projected on the surface, and constituted the nodules felt by palpation through the abdominal wall. The liver substance between the masses was microscopi-

cally normal. The transverse colon lay in front of the liver in the position of the transverse area of resonance above alluded to. The stomach and intestines were normal, except for the fact that the small intestines was only fourteen feet in length, and presented valvulæ conniventes right down to the ileo-cæcal valve. The peritoneum did not contain any actual melanotic nodules, but in many places was of a diffuse black colour. The spleen contained two small nodules, and was normal in size. The kidneys, slightly fibroid, also contained a few scattered nodules, as did the suprarenal capsules. Both these last-named structures were unusually large. The pancreas and abdominal lymph glands were normal. Two large ovarian cysts were present, floated up by ascitic fluid above the brim of the pelvis, their wall being constituted by dense black melanotic tissue, about one-fourth* of an inch in thickness. The fluid contained within them was of a dirty brown colour, but did not give the melanin reaction.

Urine.—The quantity of urine passed in the twenty-four hours never exceeded twenty ounces in volume. When first passed it was of a deep amber or slightly reddish tinge, but after standing for a few hours it became darker in colour, and ultimately almost black. It usually contained a deposit of urates, of a deep brownish tinge. A slight trace of albumen was present, but no blood. It gave the following reactions :—

1. Von Jaksch test.—The addition of a few drops of dilute perchloride of iron resulted in the production of a deep violet black colour and of a violet grey precipitate, which re-dissolved in excess of the re-agent. When the precipitate was dissolved in sodium carbonate and an acid added a blackish precipitate was again thrown down.

2. The addition of sodium nitroprusside and a few drops of liquor potassæ produced a violet colour, changing to blue with acetic acid.

3. Blackening was also obtained with the following concentrated acids :—Nitric acid, sulphuric acid, chromic acid, hydrochloric acid, and with bromine water. Weak acids had very little effect or else caused a slight deepening of the already dark colour of the urine.

4. Phosphomolybdic acid and strong sulphuric acid gave a light green coloured precipitate.

5. The addition of caustic alkalies caused the colour of the urine to become lighter and to assume a reddish tinge, which was,

however, again changed to violet on the further addition of an acid. Concentrated phosphoric acid produced much the same effect as the alkalies.

6. The copper test for sugar and the phenyl-hydragine test gave negative results, but Nylanders re-agent was immediately reduced on boiling.

7. The iodoform test for acetone was negative.

8. The indican test (hydrochloric acid and bleaching lime) gave a deep violet-black coloration, but this colour was not absorbed by chloroform.

9. When the urine was precipitated with barium chloride and filtered, the filtrate gave the characteristic reaction with the perchloride of iron.

From the above reactions no doubt at all can be felt that the substance present within the urine, and to which it owed its deep colour, was melanin, although what exactly melanin may be is a matter which has not yet been decided. Garrod has pointed out that the condition of melanuria in its wider sense was recognised even before the days of Hippocrates, but the clinical recognition of the above described variety dates only from 1861, when Eiselt of Prague reported that the urine of patients suffering from melanotic sarcoma became dark on the addition of strong acids.

In 1887 an elaborate paper by Mörner appeared in the *Zeitschrift für physiologische Chemie*, and contains a complete bibliography up to that period. It contains an account not only of the pigment of melanotic tumours, but also of the other dark pigments of the body, including that of the negro's skin and of the chorioid coat of the eyeball. Mörner points out that the various analyses that had up to that time been made public differed in two important particulars—namely, in the proportion of sulphur which the pigment was found to contain and in the presence or absence of iron within its molecule. His own conclusion was that it contained both sulphur and iron, and subsequent observations have confirmed that view, though most systematic writers still persist in their denial that it is an iron-containing body, or rather, to express the view of von Jaksch, that it is a group of iron-containing bodies.

Apart, however, from its chemical constitution the substance is of considerable diagnostic importance. When its

presence in urine was first announced many cases were reported in which no melanotic growths were present, but an analysis of these cases seems to show that all of them were examples of extreme indicanuria. Since, however, the publication of the iron test by von Jaksch in 1889 a ready means of differentiating the two conditions exists, and it is now almost universally believed that melanuria is pathognomonic of the existence of melanotic neoplasms. Not all cases of such, however, give the reaction, and the weight of evidence seems now in favour of Garrod's opinion—that melanuria occurs only when the tumours have extended from their primary site to the internal viscera, and more especially to the liver. In this case it is, of course, impossible to say at what time the reaction appeared,* but the *post-mortem* findings are at any rate in agreement with his opinion that the amount of melanin present is in direct relation to the liver involvement.

In conclusion, it is interesting to note the large number of years that the tumour remained localised and the rapid progress, measured by weeks, which the case made once the primary barrier was overstept.

ART. XIX.—*Notes on a Year's Asylum Work.** By W. R. DAWSON, M.D., F.R.C.P.I., Medical Superintendent, Farnham House, Finglas, Co. Dublin.

THE following are a few brief notes with reference to some of the more interesting points which have arisen in the practice of the year ending March 31st, 1905 :—

Causation.—On looking over the admissions of the year, it appears that hereditary diathesis played a part in the causation of no less than 66.6 per cent. of the cases, and was judged to be the chief factor in 33.3 per cent. These percentages include a case of alcoholism, not exactly insane, in which there was an inherited tendency to alcoholism only, so far as known. The admissions for the year therefore showed a larger proportion of cases with inherited diathesis than those of the previous year, in which it was known to be present only in 50 per cent. of the cases ; but, on the other hand, diathesis

* Modified from a paper read in the Section of Medicine in the Royal Academy of Medicine in Ireland on Friday, November 10, 1905.

was judged to be the chief factor in nearly 36 per cent. last year, as against 33.3 this. Mental and physical wear and tear formed the predominant cause in an equal number of cases, 33.3 per cent., but the toxic factor was more prominent than usual, accounting for 33.3 per cent., as against 21.4 per cent. in the previous year. It will thus be seen that the three categories into which the causes of insanity may be roughly divided were each mainly answerable for the same proportion of the admissions, but of course more than one factor was usually present. The toxic agent chiefly at work was alcohol, but one case was the result of influenza, and syphilis played a part in another.

Forms of Mental Disease.—The proportion of cases which might be classed as mania was again large, one-third of the admissions being of this character. Of the remainder, an unusually large proportion were cases of dementia, including two of the so-called dementia præcox, and the balance consisted of cases of *folie circulaire*, melancholia, and alcoholism. Half the cases of mania recovered rapidly during the year. An alcohol patient, who came as a voluntary boarder, was not insane in the ordinary sense of the term.

One of the cases of *mania* illustrates the tendency to recurrence in adolescent insanity. It was that of a young girl who had been treated in the previous year for the same form of disease, and had been discharged recovered in two months. She was admitted again just eleven months after the previous admission, but on this occasion was not discharged for five months. Cases such as this require very judicious treatment until adolescence is complete, the tendency to the establishment of recurrent insanity, and finally dementia, being very great. From the increased duration of the second attack, one is inclined to fear that another breakdown might prove permanent. A case of senile mania was the only instance of disease due to old age, and even in this influenza was the exciting cause.

Dementia Præcox.—The controversy which still rages about this alleged morbid entity is by no means settled, but there seems to be a general opinion in these countries that the name at least is a bad one, as implying a very doubtful hypothesis. Be this as it may, however, it must be said that cases con-

forming more or less to the descriptions of the disease, if such it be, do occur not so very infrequently in practice, and therefore until some better term is devised it is convenient to use the existing one. Three cases of this class were under treatment during the year, and in view of the present interest in the subject it may be worth while to study them more in detail.

CASE I.—Married woman, aged thirty-two; very bad heredity. She seems to have been always somewhat childish for her age, and was very untruthful, but her physical health was good. Five years before, after some monetary worries, she had an attack of mental disease which was diagnosticated as delusional insanity, the delusions taking the form of suspicions of poisoning, doubts of the identity of her relatives, and others. For this she was treated in an English asylum for about four months, during part of which time she was excited, violent and dangerous. She was ultimately discharged relieved, contrary to advice, and since then seems to have been a perfect thorn in the side of her relatives. She was sufficiently acute to avoid being certified, but was silly in other respects, had no work or interests, drank at times, and had occasional attacks of hysterical excitement. She was finally persuaded to come to Farnham House as a voluntary boarder. On admission she looked worn, neurotic, and out of health, but except for slight cardiac weakness her organs were sound. Her mental state was one of permanent dementia; her ideas on general subjects were infantile—*e.g.*, she thought that Rhodesia and China were close together, she showed total inability to grasp the simplest game, never read or occupied herself, lied freely on the smallest provocation, and was generally sly and untrustworthy. From time to time, about once or twice a month at first, she had hysterical attacks, in which she was noisy and violent for fifteen to thirty minutes, but these soon began to diminish in frequency, and towards the end of the year had practically ceased. Otherwise she cannot be said to have improved mentally, but her bodily health has shown the most marked change for the better under the tonic and dietetic treatment to which she has been subjected.

In this case we have the bad heredity showing its influence by certain mental stigmata; an attack of apparent paranoia in later adolescence in which, however, the delusions proved

temporary ; and finally a state of dementia in which perception was well maintained, while interest in surroundings and the power of judgment are largely lost ; together with occasional attacks of excitement. There can be little doubt, therefore, that Kraepelin would class this as an instance of the paranoid form of dementia præcox. The outlook is of course bad, the utmost that can be expected being a maintenance of the present state.

The second case was partly described in the notes for last year (Case III.), but may be briefly recapitulated :—

CASE II. — Student, aged twenty-one ; some neuropathic heredity. He broke down from overwork for an important examination about two years before, and five or six months previous to admission he began to suffer from hysterical attacks, and complained of mental dulness, which, indeed, seems to have persisted from the time of the first break-down. During about six weeks before admission he had three short maniacal seizures. He came as a voluntary boarder, and at first seemed to benefit, his bodily health being particularly good ; but after about a month he suddenly became very depressed, with high blood-pressure and lessened sensibility to pain. This was treated by the bed method, but he then developed a hallucination and delusions, including the idea that he was dead. When obliged to walk he showed attitudes, and there was a good deal of stupor varied with hysterical ecstasy. After a few days, however, he suddenly became acutely maniacal and violent, with delusions, sleeplessness, and refusal of food, and had to be certified. He was treated mainly with the wet-pack, and the excitement passed off after eight days, leaving him thin and weak. He soon recovered strength, however, and mentally showed great improvement, so much so that he was allowed to leave on probation in a month. At first he did not do so well outside, but on going to stay with some friends to whom he was attached he at once began to improve, and after two months was discharged absolutely. So long as he remained with these friends he continued to improve, the chief sign that he was not quite well being a tendency to wander off for a night. These escapades, however, became less and less frequent ; he began to do some mental work again, showing unimpaired intellectual capacity ; and all appeared to be going so well that his relations brought him back home and proposed to send him abroad. He had one or two more wandering

escapades owing to the worry so caused, and when abroad made two attempts at suicide, one of which was nearly successful, so that on his return home he was sent to an asylum.

The symptoms of this case, as well as its ætiology and general features, leave little doubt that it also is one of dementia præcox, but the termination might have been very different to that of the last had the relatives shown a little more patience and allowed a year or so longer to elapse before removing him from the congenial surroundings where he was doing well. Even yet one would hesitate to say that the case is hopeless.

In the third and last case the result has been still more favourable.

CASE III.—Lad of eighteen, with slight neuropathic heredity, but showing stigmata of degeneracy in the form of congenital left-sided ptosis and a high, deformed palate. He looked overgrown, poorly-developed, and young for his age. Five days after having some teeth extracted under ether he began to complain of being stared at, and on the following days was excited, chattering incoherently, repeating words meaninglessly, and refusing solid food. After a week he was sent to Farnham House, and then had a slightly raised temperature, and was somewhat exalted, facile and cheerful, but abstracted and silent unless spoken to. He walked with a peculiar stiff pacing gait, hands hanging, head drooped forwards, but from the beginning could be got to play cricket. In fact he did anything he was told, sometimes with an exaggerated alacrity, though when not directed to do things he usually remained apparently absorbed in contemplation. During the earlier months of his treatment he manifested various delusions, such as that a wasp or moth was in his room and would kill him, that he was to be fired out of a cannon, and so forth, and also hallucinations, auditory (inarticulate sounds and voices), visual (insects), and of smell (bad odour from his person). He was put on tonic treatment, fed up, and made to take such exercise as his strength allowed in the form of walking, wood-cutting, cricket, hockey, &c., and in about three months some improvement was manifest, which from that time progressed without interruption, until finally he was discharged perfectly well in less than six months, a cheery, pleasant, active lad, in good bodily health, and eight pounds heavier than on admission. It may be noted that his blood-pressure, which was

high on admission, dropped before his discharge. All subsequent accounts of him have been favourable.

This case has been dealt with at some length with a view of showing that it was undoubtedly one of dementia præcox of the hebephrenic form, most of the classical features being present. Yet this patient made an excellent recovery, notwithstanding the statements of some authorities that such cases never get well. From it, therefore, and to some extent from the preceding case, we are entitled to conclude that the prognosis in dementia præcox is by no means so hopeless as has been supposed.

Alternating Insanity.—In previous years stress has frequently been laid on the fact that the recurrent forms of insanity are most frequently, if not invariably, found in persons with a hereditary neuropathic diathesis. Of no form is this held to be more true than of the rather uncommon alternating insanity or *folie circulaire*, two cases of which were admitted during the year: yet in one of these at least the evidence of heredity is wanting.

CASE IV.—A well-to-do man of business, aged fifty-three, free from hereditary taint, so far as known. That there was probably some neuropathic tendency, however, was shown by the fact that one of his children is paralysed in both legs, and was formerly addicted to alcohol. The patient himself seems to have been what is commonly known as “wild” in his youth, and was given to moods. When he was about thirty-eight the first pronounced attack of mental depression occurred, lasting about three months, and was followed by a period of high spirits, which then passed off. Since that date the succession of depression and exaltation has occurred about once every two years, and the attacks have been increasing in violence. In one of his maniacal periods he became violent and dangerous, and was sent to an asylum in 1899, where he had recovered by the end of 1902, and remained well up to the summer of the following year. His wife then became ill, and as a result he was seized with an attack of depression which has persisted ever since, being the longest which he has yet had. His melancholia, as usual in alternating insanity, is not very acute. It is hypochondriacal in form, as it has been throughout; and though a very healthy man, with an excellent appetite and digestion and able to play out-door games

and take other exercise, he maintains that he is seriously unwell and very weak.

Regarding the antecedents of the second case, no facts are forthcoming.

CASE V.—It is that of an old lady, aged over seventy, who was for many years an inmate of a small private institution, now broken up, previous to which she was in various other asylums. The original cause of her insanity is said to have been alcohol, and it is stated that she had a large number of distinct attacks, the last before that for which she was admitted having taken place about six months previously, and lasted about three months. Between the attacks she seems to have been mildly demented. She was rather excited on admission, and complained of hearing voices, which said annoying things to her, and kept her awake at night. She was very talkative and incoherent, and remained in the same condition for about two months, when she improved and became comparatively sane. Since then she has had two attacks, and, though not so well-defined as those in the last case, they consist of a short period of hilarity followed by a longer one of depression, which gradually passes into the state of slight mental weakness which is the nearest to normal for her. The auditory hallucinations are never absent, but when at her best she does not mind them much, and is almost persuaded that they are not real.

In this case it will be seen that the order of the periods is the reverse of that in the previous one. In both the prognosis is, of course, bad as to complete recovery.

Physical Disorders and Symptoms.—A subject of the irritable type of mania, admitted during the year, was found to be suffering from mitral incompetence, and two other patients admitted (one of dementia præcox, the other of melancholia) had weak hearts without actual disease. Another case of dementia præcox had a quick pulse *with* high arterial pressure. The *arterial pressure* was taken in eight new cases, in two of which (simple acute mania and chronic alcoholism respectively) it was found to be normal. In two others it was low, and these, strange to say, were both depressed, being thus exceptions to the almost invariable rule that blood-pressure is high in melancholia. No circumstance explaining this anomaly was to be found in one case, but in the second the heart was very weak and the

patient debilitated, this, no doubt, being the cause of the low pressure. The remaining four cases (two of dementia præcox and two of mania) showed high pressure, and thus two were apparent exceptions to the rule. It has been found, however, that low pressure is less commonly found in mania than high in melancholia, and, as a matter of fact, it appears to depend on the precise form which the mania assumes. Both of these were examples of angry mania, which delusions of an unpleasant cast rendering the patients somewhat unhappy, and were not instances of the cheerful, hilarious variety, where in all probability the pressure will be found to be low almost always.

A chronic alcoholic suffered on admission from the usual dyspepsia, which speedily yielded to treatment.

A number of cases had transitory *albuminuria* on a single occasion, generally slight. No particular conclusion could be drawn from the mental character of these cases, but about half were more or less depressed. Albumen in large amount was present for a long time in the urine of an old paranoiac, who died early in the year, and a small quantity was habitually found in that of a senile melancholiac who had long suffered from chronic nephritis. It was also met with twice in a case of mild dementia due to alcohol and syphilis. This patient was not depressed.

Glycosuria, often slight, was found in twelve cases, usually only once or twice, during the year, but one case of minor epilepsy showed it practically continuously. Some of these cases had had the symptom on previous occasions. The general character of the mental symptoms was in accordance with previous observations, and showed that glycosuria most commonly occurs in conditions of depression or dementia. Beyond this it appears to have no particular significance when occurring merely as a transient phenomenon.

The following case offers some points of interest on the physical side :—

CASE VI.—Male, voluntary boarder, aged thirty-one, single; neuropathic heredity probable, but not ascertained. The patient was always very eccentric and lived a wild life, drinking heavily, more than once to the verge of delirium tremens. He also contracted syphilis about ten years before admission.

Four years later a series of seizures commenced, in each of which he was unconscious at the time, and more or less paralysed afterwards, recovering gradually. He continued to drink, and finally, four years before admission, he had an attack in which he was unconscious for days, since when he has been partially paralysed and somewhat weak-minded, seems to have been somewhat erotic, and was given to fits of rage at times. For some weeks previous to admission he was treated with iodide of potassium in a general hospital, and is said to have improved somewhat. While there the muscles of his back and legs were found to be weak, with ankle clonus and the Babinski reflex, but those of the arms were fairly strong. On admission he was found to be facile and good-humoured, with a fair memory and intelligence, and free from delusion or other gross abnormality. He was, however, given to boasting and "drawing the long bow," but not to an insane degree, and it may be said once for all that, although some mental weakness existed, he was not considered to be certifiable. His face was rather immobile and his lips weak, as also the muscles of deglutition. The legs were weak and the muscles somewhat atrophied, but not excessively so, and with help he was able to walk slowly. All his movements were slow, and he could not button his clothes; but there were no intention tremors, and he could write and pick up a pin. Speech slow and monotonous, but not syllabic or slurring. Knee reflexes exaggerated: ankle clonus present. Eyes normal, except that the right pupil was a trifle the larger. The sphincters sometimes failed to act, and nocturnal emissions were troublesome at times. He was treated with lecithin for some time without result, later with strychnin and quinine, and finally with potassium iodide. None of these drugs produced any marked effect, but the net result was considerable general improvement when he was discharged after some five and a half months' residence. It should have been mentioned that he had been ineffectually treated, at various times before coming here, by massage and electricity.

There are so many points in this case inviting discussion that too much space would be occupied in dealing with them; but a few words may be said on the diagnosis. One naturally thinks of general paralysis, and in view of the great variability of the symptoms in that disease, it cannot absolutely be excluded. Still the slight degree of dementia, the non-

progressive character of the paresis and its partial distribution; the absence of signs almost universally found in general paralysis, such as certain ocular phenomena, speech-slurring and the like, and the persistence of the sexual nisus at so late a period of the disease, render this diagnosis in the highest degree improbable. One must suppose that a degenerative process with a more localised distribution, and practically non-progressive, had been set up by the alcohol in a brain weakened by syphilis, and that secondary degenerative changes then took place downwards along the spinal cord.

Treatment.—Hydropathic treatment in the form of the *wet-pack* proved very useful in an exceedingly acute maniacal attack occurring in the course of dementia præcox (Case II.), cutting short the attack in a few days. It was also frequently used in a more prolonged case of mania with numerous fits of restlessness and violence, though in this case the results were not so conspicuous.

A short course of general *massage* was tried in a case of agitated melancholia, combined with a good deal of stupor, but did not prove sufficiently effective to justify continuance. The same patient was subjected to *thyroid treatment* later in the year, but proved so susceptible to the drug that it had to be stopped after only 175 gr. had been given, owing to symptoms of collapse and an attack of asthma. The patient is said to have been subject to the latter, but is the only instance in which this symptom has occurred in this institution as an effect of thyroid. The treatment produced no immediate improvement, but about four months later a change for the better set in, the patient being nearer to mental recovery than at any time since her admission. It is very questionable, however, if the thyroid treatment can have had anything to do with this.

A case of chronic alcoholism of some seventeen years' standing underwent a course of *atropin treatment*, at first with excellent results.

CASE VII.—Man of forty-nine, with alcoholic heredity. He had drunk to excess for about seventeen years, with occasional intervals of some months. Before admission he was taking six to eight glasses of whisky in the day, but does not seem to have been made actually drunk by it. He had been living on milk

only for some weeks, with a little soup, owing to want of appetite and morning sickness. There was some general tremor, and toxic amblyopia was present, but beyond this the bodily condition was fair. Treatment by means of strychnin and atropin injection was started at once, beginning with $\frac{1}{60}$ gr. of the former and $\frac{1}{200}$ of the latter thrice daily, and rising gradually to $\frac{1}{15}$ and $\frac{1}{50}$ gr. respectively. The atropin was stopped after twenty-three days, but the strychnin injections were continued for thirty-eight days longer. A mixture containing extract of cinchona and compound tincture of gentian was given at the same time, a little cascara being subsequently added. A small quantity of whisky was allowed for the first three weeks, and the patient was carefully dieted. On the third day of treatment he began to suffer from hallucinations of a vivid description, mainly visual, but also auditory, and—in one instance—of touch, the nature of which, however, he recognised. The atropin was discontinued for a couple of days, and large doses of morphin were given, with the result that the hallucinations soon passed off, and did not return again. The patient's general health, as well as his mental powers, improved rapidly, and he was soon able to take ordinary diet. Any craving for stimulants likewise disappeared (although there was no actual distaste such as has been described); and notwithstanding that he could have obtained stimulants, being allowed to go into Dublin, there had been no relapse up to the end of the year, over four months from the commencement of the treatment.

On the whole this case was so far satisfactory that the alcohol was discontinued and the craving broken without any great discomfort. The hallucinations evidently signified an attack of delirium tremens due to the action of atropin superadded to the alcohol, but it was fortunately possible to abort it.

Hypnotic suggestion was tried, at first with some success, in the following case:—

CASE VIII.—Man, aged forty-eight, with neuropathic heredity, who was admitted as a voluntary boarder suffering from mild mental depression, the result of insomnia due to overwork and worry in an onerous and responsible post. The insomnia was of about a year's standing, but had been cured for a time by a sea voyage. He soon relapsed, however, and found himself unfit for his work, easily tired and depressed. His general bodily

health was good and his organs were sound. On going to bed he would drop off to sleep, but always awoke about 3 a.m., and did not sleep again, frequently owing to an attack of flatulence. Under ordinary treatment with sedatives and carminatives he got sufficient sleep and improved greatly in health and spirits. As, however, his sleep was still not so good as to guarantee continuance, it was thought advisable after five weeks to try hypnotism. He proved an easy subject, and was hypnotised six times and told that he would sleep until after 6 a.m., which he did. He then went to England for a change, and remained well for three weeks, but on his return to Dublin lost his sleep again. Henceforth, though still easily hypnotised, he seemed to have largely lost his susceptibility to suggestion so far as sleep was concerned, as he could not be got to sleep after 4 a.m. Hypnotic suggestion combined with friction to the abdomen during hypnosis, however, invariably relieved his flatulence and abdominal discomfort. Some degree of depression returned, but had passed off during the last few days of his residence, the blood-pressure, which was 130mm. on re-admission, falling to 115mm. He was finally discharged after about six weeks, and advised to go back to his work.

In this case the failure of suggestion when tried after the relapse may have been partly due to the fact that on the second night, after being hypnotised, he was kept awake owing to the illness of his wife. (Hypnosis was tried while he was staying in Dublin, in order to avoid, if possible, a return here.) He had slept well after being hypnotised on the previous night, but this break in the effects of suggestion seemed to impair his faith in its efficacy, and hence to lead to failure.

A case of minor epilepsy, described in last year's notes (Case VIII.), who at that time had been for over three months kept free from attacks by a mixture containing potassium bromide combined with digitalis, continued perfectly well, and was discharged just before Christmas. All accounts of him up to the end of the year were favourable, but he was still taking the mixture, though in reduced strength.

Cerebrin (Poehl) tried in another case of epilepsy, in which it had done well before, seemed to have lost its effect, and the combination of digitalis and bromide also failed to yield any conspicuous results.

Lecithin also was ineffective in one or two cases of a degenerative character in which it was tried.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Nervous Diseases in Childhood and Early Life. By JAMES TAYLOR, M.A., M.D., F.R.C.P.; Physician for Out-patients to the National Hospital for the Paralysed and Epileptic, Queen's Square; Physician to the North-Eastern Hospital for Children; and to the Moorfields Eye Hospital. London; J. & A. Churchill.

DR. TAYLOR acknowledges his indebtedness to Sir William Gowers for having suggested to him that he should write the treatise under review. Strange to say that in the enormous output of medical literature in the present day the necessity for a work of this nature should have been so long overlooked. In justification of writing a separate work on the nervous affections of childhood Dr. Taylor draws attention to the peculiar characteristics of many nervous affections as they occur in the young which distinguish them from similar affections occurring in the adult.

The earlier chapters of the book deal with inflammation of the meninges, and the following general classification is adopted according to the specific cause:—

Tubercular meningitis.

Simple posterior basic meningitis.

Suppurative meningitis.

Epidemic meningitis.

Syphilitic meningitis

Koch's bacillus.

Still's diplococcus.

Staphylo-strepto-pneumococci.

Diplococcus.

There is an excellent illustration, showing the extreme opisthotonos of the simple posterior basic variety, and the

theories that have been put forward in explanation of this marked phenomenon are fully discussed. In the differential diagnosis between this affection and the tubercular variety the further distinctive points are emphasised—viz., the comparative rarity of optic neuritis, bradycardia, and abdominal retraction in the posterior basic type, with the important fact that 16 per cent. of these cases recover. The treatment recommended in the basic variety includes puncture of the tympanic membrane, with the vigorous use of mercury and iodide of potassium; of the latter 1 to 3 grains every two hours should be given to an infant.

It will have been noted that the specific organism given as the cause of epidemic meningitis is a diplococcus, and Dr. Taylor is careful to explain further on that many competent observers consider this to be identical with the *Diplococcus lanceolatus* of pneumonia. Indeed, the author does not mention in this connection the *Diplococcus intracellularis meningitidis* of Weichselbaum, but, when describing Still's diplococcus, he explains that it is smaller than the pneumococcus, never develops an arrangement like a streptococcus, and does not coagulate milk; and he goes on to say that Still's diplococcus is like that of Weichselbaum, except that it has greater vitality, and that Dr. Still himself considers them to be two natural varieties of the same organism.

The following section is devoted to paralysis of cerebral origin, and includes the hemiplegic forms resulting from encephalitis, vascular lesions and injury, also the diplegic forms resulting from death of cortical cells, all of which have been previously dealt with by Allan Starr in his work on "Diseases of Children."

The chapter on amaurotic family idiocy which follows is an excellent epitome of this condition. First described by Mr. Waren Tay in 1881, a considerable amount of literature on the subject has since arisen owing to the researches of Sachs and others abroad, and of Kingdon and Risien Russell at home.

Next in order comes a description of sinus thrombosis, in which the difficulties of diagnosis are fairly met.

Intra-cranial abscess, hydrocephalus, and intra-cranial tumours are discussed with the importance which attaches to each of these conditions respectively. More particularly has the author endeavoured to elucidate the signs of localisation which are indicative of cerebral tumour. Two illustrations are appended which show at a glance the conditions met with as the result of a tumour in the pons.

The chapter on chorea is a long one, chiefly because, as might be expected, the author has gone very fully into the pathology and morbid anatomy of the disease, and has discussed the treatment at considerable length.

It is of interest in the latter connection to note that while he considers doses of two to five minims of Fowler's solution given thrice daily after meals to be followed by marked benefit in many cases, he states that larger doses should never be given. The occurrence of neuritis, even occasionally, as a sequela is in itself sufficient to suggest caution in the administration of arsenic.

Myoclonus, the tics, and stammering are each given a chapter—that dealing with the last-named condition being especially instructive.

The chapter on convulsions in childhood is an important one, and deserves careful perusal. The treatment recommended is quite specific, but more particularly do the immediate measures suggested to allay an attack commend themselves. Where pyrexia is present, the hot bath, a few grains of calomel, and the rectal injection of from twenty to thirty grains of a bromide salt in the case of even quite a young baby sum up what is most excellent in the way of treatment.

The difficulties which surround the diagnosis of epilepsy in children have not been overlooked, and the experience of the author agrees with that of other writers, that in the treatment of this condition bromide of sodium is preferable to the potassium salt. At the same time he is not averse from using the mixed bromides.

The subject of cretinism, but particularly that of the sporadic form, is now approached by authors in a more cheerful manner than was the case in the days before the

introduction of thyroid treatment. Any additional light that has been thrown on the treatment in quite recent years is in the direction of showing that the older cretins do not benefit in the same way from the administration of the thyroid substance as do the young ones.

An interesting chapter is that on achondroplasia. The hydrocephalic-like head, with the short upper arms and thighs, present a picture of dwarfism which, once recognised, renders a future diagnosis easy.

Hereditary cerebellar ataxy, juvenile or hereditary tabes, syringomyelia, myasthenia, and the muscular dystrophies are treated in a lucid, scientific manner, and occupy the remaining portion of a work which is worthy of the highest praise.

Our congratulations are offered to Dr. James Taylor for the production of a treatise which has established him as a clear writer, a careful observer, and a true scientist.

The Royal Medical and Chirurgical Society of London Centenary, 1805-1905. Written at the request of the President and Council by NORMAN MOORE, M.D., F.R.C.P., Hon. Librarian; and STEPHEN PAGET, F.R.C.S., Hon. Secretary. The Aberdeen University Press, Ltd. 1905.

THIS extremely dignified octavo of 337 pages is a worthy monumental record of one of the most important and productive of all the vast number of societies which have from time to time been formed for the culture and improvement of the art of healing and the mutual enlightenment of its followers. The President and Council, it need hardly be said, knew their men, and surely made the best possible selection when requesting Dr. Norman Moore and Mr. Stephen Paget to undertake the discharge of what may be regarded—without implication of Hibernicism—as a privileged duty in the compilation and composition of the text of this volume. It contains—besides a Century of Chronicles of the Royal Medical and Chirurgical Society of London—a “short account of its Presidents.” The source of the Chronicles has, of course,

been the Minute Books, Proceedings, and Transactions of the Society, while the account of the Presidents "is drawn from the usual source of such biographies." The Chronicles are necessarily sketchy. The account of the Presidents has, avowedly, "been composed with the intention of the sage of old—'Let us now praise famous men, and our fathers that begat us.'" The first President of the Society was William Saunders, M.D., and his picture in little, admirably reproduced, is, very appropriately, made to function as frontispiece. This eminent physician wrote well and wisely on the subject of the "Endemial Colic of Devonshire," whose nature had just been exposed by Sir George Baker, and became afterwards more familiarly known as *Colica Pictonum*—the true English rendering of which has always proved a veritable *pons asinorum* to the average medical student. The second President was Matthew Baillie, the original founder of the study of *Morbid Anatomy* as a distinct science. After a few less familiar names we come on that of Sir Astley Paston Cooper (seventh President, 1819), whose monumental works on *Fractures and Dislocations* and on *Hernia* form imperishable landmarks of the progress of surgical knowledge; of John Abernethy (ninth President, 1823), by parentage an Irishman, prominently gifted with some of the most characteristic qualities of his native country; whose pupils all remained through life "unanimous in the opinion that he was the best teacher to whom they had ever listened," and of whom Sir Benjamin Brodie has recorded in his *Autobiography* that "that which he told us could not be forgotten"; of Benjamin Travers (eleventh President, 1827), a surgeon of very considerable originality; of Sir William Lawrence, who was for many years recognised by his treatises on *Hernia* and *Diseases of the Eye* as one of the highest authorities on each of these rather widely divergent domains of surgical research and practice; and of John Elliotson of mesmeric as well as purely medical fame—who was (fourteenth President, 1833) the first President of the Society after its incorporation as the Royal Medical and Chirurgical Society of London in 1834. The name

of the sixteenth President probably looms more largely above the mental horizon of most medical practitioners than does that of any other of the long series of colossi of the healing art who have in turn occupied the leadership of this Society. We will close with his name, for we wish it to remain in the memory of our readers as well as of ourselves to guide and to inspire. There are many others worthy of special notice, but we (obviously) cannot afford the space due to their merits. So we conclude this superficial notice of a most inspiring volume by offering our cordial thanks to Dr. Norman Moore and Mr. Stephen Paget for the pleasure and instruction which the perusal of their work has afforded us.

Reports of the Sleeping Sickness Commission of the Royal Society. No. VI.

This volume contains the following items :—

11. Continuation Report on Sleeping Sickness in Uganda, by CAPT. GREIG, I.M.S., and LIEUT. GRAY, R.A.M.C. (Sleeping Sickness Commission).

12. Report on Sleeping Sickness in the Nile Valley, by CAPT. GREIG, I.M.S.

13. The Distribution of the Tse-tse Flies (with Map), by E. E. AUSTIN, F.Z.S.

14. The Multiplication of the Trypanosoma Gambiense in the Alimentary Canal of *Glossina palpalis*, by LIEUTS. GRAY and TULLOCH, R.A.M.C. (Aug., 1905).

THE first of the four papers comprised in this Report takes up the greater part of the book (273 pages). The first couple of pages are all that need be read, the remainder being devoted to detailed accounts of cases, with temperature charts, of animal experiments and *post-mortem* examinations, all set forth at such length and in such detail, even when the results are negative as to the points at issue, that the reader is led to infer that the authors lay more stress on the routine work they have accomplished than on the positive advances they have made in our knowledge. Briefly, the outcome of the

Report is to confirm the conclusions previously arrived at by Bruce, Greig, and Nabarro to the effect that—

(1) *Trypanosoma* disease (of man) is *at first* a specific poly-adenitis, with lymphocytosis, and afterwards develops into “sleeping sickness,” the onset of which synchronises with the entrance of the *Trypanosoma gambiense* into the lymph spaces of the central nervous system.

(2) Arsenic destroys some of the trypanosomes, the dead bodies of which act (probably) as immunising agents. Its administration during the stage of poly-adenitis thus tends to help the natural resistance, which is variable in amount.

(3) Bacterial invasion (chiefly coccal) is sub-terminal and ætiologically unimportant.

(4) *Trypanosoma gambiense* is not the only pathogenic trypanosome met with in Uganda, and propagated by flies (*Glossina palpalis*, not *Stomoxys*).

The widespread nature of the malady in Uganda may be judged from the estimate of the writers that from 50 to 75 per cent. of the inhabitants are in the early stage of poly-adenitis. Not all, however, pass on into the sleeping-sickness stage, many succumbing to intercurrent affections, chiefly pneumonia. During the early stage the patient is able to work, and meanwhile acts as a “reservoir” whence the biting fly may draw its supply of parasites. These multiply within the fly, but (contrary to what might have been expected from the researches of Schaudinn on the trypanosomes of the stone-owl) have not been observed to pass through any definite cycle of development. Examination of the juice of the enlarged glands for trypanosomes constitutes the readiest means of diagnosis during the early stages. The parasites are rarely present in the circulating blood in man—more often in the monkey.

These appear to be the main facts ascertained or confirmed in the Report. By way of illustration there are two well-executed coloured drawings (by Mrs. Bruce) of the two new varieties of trypanosome discovered by the writers, one in the blood of a dog suffering from “Jinga

Cattle Disease," the other in that of a mule. The parasite in the latter case shows very peculiar "stumpy" and vacuolated forms. There is also a coloured drawing of a peculiar hæmorrhagic condition of the gastric mucosa met with by the writers in several of their autopsies of natives dead of the disease. We also find a couple of charts of tse-tse fly and sleeping-sickness distribution, showing their respective parallelism, and two photographs of diseased natives showing the enlarged glands.

The contents of the second and third parts of the Report may be inferred from their titles. With regard to the fourth part, dealing with what is, for morphologists, the most interesting of all the subjects dealt with—the life cycle of the trypanosome within the fly—the authors can tell us (1) that multiplication of the parasite occurs, and (2) that the parasites taken from the intestinal canal of the fly are innocuous. Presumably they must undergo a process of maturation to render them infective, and this maturation must occur during their transit from intestine to salivary glands or proboscis. Like a certain class of novel which is "to be continued in our next," the Report breaks off, leaving the vital problem unsolved, and we are left in ignorance as to whether the authors' experiments with trypanosomes taken from the mouth organs of the fly proved infective. We look forward with interest to the next Report, which will, no doubt, clear up the matter. We would wish that more cytological detail bearing on such points as the modes of nuclear division had been included in the authors' study of the developmental cycle of the trypanosomes.

Essentials of Human Physiology. By D. NOEL PATON, M.D., B.Sc., F.R.C.P. Ed. Second Edition. Revised and enlarged. Edinburgh and London: William Green & Sons. 1905. Pp. 444.

It is with much pleasure that we call the attention of our readers to the second edition of this excellent hand-book. Its object is, the author tells us, "to put before medical

students as succinctly as possible the essential facts of human physiology, and to emphasise specially those parts of the science which are of cardinal importance in medicine and surgery." It is intended to supplement the practical laboratory work and demonstrations by which real knowledge of the subject should be gained, and reference is continually made to the books on practical physiology, particularly those of Professor Schäfer and of the author himself. Experiments are not described at length, nor are descriptions of drawings of instruments and apparatus given.

The arrangement of the matter does not call for any lengthened notice. The work is divided into two parts. In the first, after short sections on protoplasm, the cell, the epithelial and connective tissues, we have the general physiology of muscle and nerve, the special senses and the central nervous system. These sections are distinguished by accuracy and brevity, and contain pretty well all that a student should know on the subject dealt with. The text is illustrated by numerous diagrams well designed to show the difficult and often complicated connections of different parts of the nervous centres.

In the second part, on the nutrition of the tissues, there are sections on blood and lymph, circulation, respiration, digestion, internal secretions, renal and cutaneous excretion, and a short section on reproduction.

Here we find the same brevity and clearness as in the first part. The author does not enter into discussions on doubtful points, but states what he believes to be the most probable view in accordance with the present condition of science.

There is a short appendix, giving some elementary facts of organic chemistry. We cannot help wishing that Dr. Noel Paton had given us a little more chemistry and physics. Some explanation of such subjects as osmotic pressure would have greatly increased the value of his book.

The work is admirably brought out by the publishers. It is well printed and bound, and has a good index. It is, indeed, one which can be safely recommended to the

medical student, who has now such an extensive choice of physiological text-books that he often finds a selection difficult.

An Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology. Compiled for the New Sydenham Society (a continuation of the "Atlas of Pathology"). Fasciculus XXII., being XIV. of the Clinical Atlas. London: The New Sydenham Society. Agent: H. K. Lewis, 136 Gower Street, W.C. 1904. Folio.

THE special subjects illustrated in this, the fourteenth Fasciculus of the New Sydenham Society's Clinical Atlas, are leucoderma and myxœdema. By leucoderma is understood a condition in which portions of the skin have lost their pigment and become white. The patches, small at first, spread at their borders, but always remain more or less rounded. The condition was formerly known as Vitiligo or Leuce, and was often confused with true leprosy, in which dreadful disease leucodermic changes do occur in three principal forms. Of the form which most closely simulates common leucoderma a portrait given in Plate H. affords a good example, the patient being a Hindoo leper, the unhappy subject of maculo-anæsthetic leprosy.

Myxœdema is illustrated in two plates, the first showing myxœdema in an early stage in a woman aged thirty years, the second containing portraits of another patient, also a woman, when at the respective ages of thirty-four, thirty-eight, and fifty-seven years. At the last-mentioned age this woman exhibited also the physiognomy of acromegaly in a marked degree. The case of the first patient was brought before the London Polyclinic at a recent meeting by Dr. G. W. Sequeira. The woman has much improved under treatment. The portraits of myxœdema necessarily lose much for want of colouring.

Plates K. to O., inclusive, contain striking illustrations, in sequence, of albinism in an Indian, ossifying cartilaginous tumours of the digits, unilateral hyperostoses of the skull and lower jaw, rhinophyma, and elephantoid

hypertrophy of the right upper extremity in a little Hindoo girl aged five and a half years.

This Fasciculus finally contains two coloured plates showing acute vesicular eruptions from iodide of potassium. Of these portraits the first is reproduced from the New Sydenham Society's Atlas of Skin Diseases. The subject of this portrait was a married woman, aged thirty-seven, who was admitted to the London Hospital on May 18, 1869, under the care of the late Dr. Ramskill. A bullous eruption appeared on her skin while under treatment for heart disease. It was confined to the face and the backs of the hands, and the diagnosis at the time was "Hydroa" from iodide of potassium.

The patient whose condition is represented in the second coloured plate was a man who was remarkably susceptible to the influence of iodide of potassium. He was the subject of chronic rheumatism, for which various medical men had repeatedly prescribed the iodide. On several occasions he showed acute symptoms of poisoning from single doses, and twice he had distinctly unpleasant experiences, the result of his unfortunate idiosyncrasy. On one occasion the eruption in its early stage was mistaken for that of small-pox, and he was placed in an isolation ward. Another time he was admitted into the London Hospital suffering from œdema of the larynx and such urgent dyspnœa that tracheotomy was performed. His attacks of illness lasted only a few days, and then passed off completely, the drug of course being suspended.

The excellence of this Fasciculus entirely redeems the high character of the Clinical Atlas, which was in some jeopardy from the mediocrity of the previous Fasciculus.

Laryngeal Phthisis. By RICHARD LAKE, F.R.C.S. Second Edition. By HAROLD BARWELL, F.R.C.S. London: Baillière, Tindall & Cox.

THIS second edition is much more complete than the first, and contains a considerable amount of new material. The references to authors which has been added will prove of

service. The arrangement of the book is good and easy for reference, and the chapter of historical fact very interesting. The various tables are good and clear. The remarks on diagnosis are very helpful, one of which may be quoted here:—"It is important to remember that many of the slighter cases have no subjective symptoms whatever." The coloured drawings are good and well chosen, and many of the other pictures are clear, and serve to explain the various descriptions in the text.

The Plea for the More General Use of Tuberculin by the Profession. Being the Address given at the Annual Meeting of the Dermatological Society of Great Britain and Ireland, May 24th, 1905, by DR. M'CALL ANDERSON, Regius Professor of Medicine in the University of Glasgow; Representative of the University on the General Medical Council. Glasgow: James MacLehose & Sons, Publishers to the University. 1905. Pp. 56.

TUBERCULIN, after the enthusiasm which greeted its introduction, fell into discredit, especially in the British Isles, as it was realised by many observers that in it we have an uncertain remedy, which often reveals foci of tuberculous infection which were previously unrecognised, and that through its influence these foci, hitherto dormant, are in many cases lighted up to a new activity.

Dr. (now Sir) M'Call Anderson, who has used tuberculin since its introduction as a diagnostic and curative agent, objects to this view as generalised, and believes that by its means we are enabled to attack and, in an early stage, destroy foci of disease in internal parts before they have become a source of danger.

The results of treatment by tuberculin are given at length in the paper, and Sir M'Call Anderson seems to have achieved wonderful success, especially in cases of lupus. The objects aimed at being to produce a well-marked local reaction with as little fever as possible, the following rules are laid down for the carrying out of treatment:—

1. The initial dose of the old tuberculin in the case

of an adult should not generally exceed $\frac{1}{2}$ c.c. of $\frac{1}{1000}$ and sometimes it is safer to begin with $\frac{1}{4}$ c.c.

2. If a given dose yields little or no result, it is usually safer to give a second of the same strength as the last, because the latter often acts much more severely than the former.

3. The more pronounced the constitutional reaction the longer should the interval be before the following one—an interval of several days of apyretic temperature at all events.

4. Much greater care must be exercised in increasing the doses at the earlier than at the latter periods of the treatment, because the system gradually gets acclimatised to it, so much so, indeed, that, while an initial dose of $\frac{1}{2}$ c.c. of $\frac{1}{1000}$ may raise the temperature to 103° or 104° , the final dose—say of 1 c.c. of pure tuberculin—may have no result at all.

The paper will repay the study of practitioners who may be inclined to use tuberculin in cases under their care.

On the Hours of Sleep at Public Schools. Based on an Inquiry into the Arrangements existing in Forty of the great Public Schools in England, and others in the U.S.A. By T. D. ACLAND, M.A., M.D. Oxon., F.R.C.P.: Physician to St. Thomas' Hospital, and Consulting Physician to the Hospital for Diseases of the Chest, Brompton. London: J. & A. Churchill. 1905. Pp. 33.

THIS paper, which was read before the Medical Officers of Schools Association during the present summer, deals with a subject of far-reaching importance on which the medical profession will have to speak with no uncertain voice in the near future. The healthy adult requires on an average eight hours' sleep for recuperation. The school-boy at the period of puberty requires, in excess of this, an allowance of "germinal sleep" connected with processes of growth and development. In only five of the forty English public schools is there an allowance of $9\frac{3}{4}$ to 10 hours made for undisturbed rest in the case of the

younger boys, while in all the American schools which Dr. Acland has communicated with the approved hours given to younger boys is $9\frac{1}{2}$ to 10.

The stress and strain of modern life necessitates increased brain activity. If the spread of neurasthenia is to be checked, rest of body and mind, especially during the period of development, must be obtained, and the traditions of many of our most famous schools will have to give way in the presence of modern requirements.

Dr. Acland has brought forward a most important subject for consideration, and we hope that as a result many medical officers of schools will be strengthened in their demands for longer hours of repose for younger boys in public schools.

Drink Restriction (Thirst Cure), particularly in Obesity.

By PROF. C. VON NOORDEN, Physician to the City Hospital, Frankfort a M.; and DR. HUGO SALOMON. Authorised Translation under the direction of BOARDMAN REID, M.D. Bristol: John Wright. 1905. Pp. 86.

THIS book has interested us much. We have in our practice been in the habit of prescribing for many patients that they should drink a larger quantity of fluid than it had been their custom to do. We think that many other doctors have similar views on this subject. It is very easy to slide into the habit of giving such recommendations without due discrimination—that is to say, without carefully considering the limitations of the treatment and the question whether an addition to the intake of liquid might not possibly do harm as well as good. Professor von Noorden's little book discusses the subject from a scientific standpoint, and is well worth reading and meditating upon. He begins (after the manner so dear to the German mind) with a historical sketch of the subject from the days of Hippocrates down. He has not forgotten to include Bellingham's and Tufnell's work on the treatment of aneurysm. A good deal of attention is devoted to Oertel's system. Von Noorden considers the restriction of drink-

ing in cases of heart disease to be of inestimable value as a prophylactic; and when compensation has broken down he has met with cases in which heart tonics were useless until reinforced by a thirst-cure. "If one decides to institute an energetic thirst-cure it is best, according to our experience, to restrict or stop all solid food as well as liquids—i.e., to induce the patients to fast completely for a few days, and to take no liquids whatever during this time." In cases of chronic contracted kidney benefit often follows restriction of drink, and von Noorden and others have shown that the elimination of urinary solids is not reduced when the total intake of fluid is reduced to 54 ounces, or even to 45 ounces, per diem. (On the other hand, he finds the method useless when uræmic symptoms have begun, and also in chronic parenchymatous nephritis with œdema.

The next chapter, which occupies the greater part of the book, relates to obesity. The view has been frequently put forward that water-restriction increases and accelerates the oxidation going on in the organism, and in especial the destruction of fat. Von Noorden made several experiments on human beings to ascertain the truth of this view, and shows that it cannot be entertained. Drink restriction causes loss of weight, but this loss is due to concentration of the body fluids, and to reduction of the appetite. But in many cases of obesity the heart is unfit for its work. Drink restriction lessens the total labour performed by the circulating apparatus, the heart is spared, and the patient often is much benefited. The experiments referred to above appear to be the first performed on human beings. Details are given in full, and are worth careful consideration. In cases of obesity with heart symptoms he restricts all liquid to $1\frac{1}{2}$ litres (53 oz.) per diem.

In chlorosis he advises the restriction of fluids to $1\frac{1}{2}$ to 2 litres daily, having observed that the patient's vigour and appetite greatly increased when unlimited drinking is not allowed. In cirrhosis of the liver he also finds the method useful. In one case, after two tappings, the patient restricted himself to 1 litre (35 oz.) of fluid, and remained free from ascites, although after two years he ceased to

restrict his water drinking. In hæmorrhages, von Noorden has repeatedly insisted on the complete abstinence from all liquids for from three to five days.

The translation has been fairly done, but we would like to ask Dr. Boardman Reid, of Philadelphia, what is the English of "the forced transputation of liquid through the blood stream," and what is an "apodietic manner"? The latter word is, we presume, a misprint for "apodictic," more correctly written "apodeictic"—that is, self-evident or clear beyond contradiction.

Memoranda Relating to the Discovery of Surgical Anæsthesia, and Dr. William T. G. Morton's Relation to this Event. By WILLIAM JAMES MORTON, M.D. Reprinted from the "Post-Graduate" for April, 1905.

To make a discovery is the privilege of few in this world, and consequently we are not surprised that the fortunate individual should be deemed worthy of much honour, and that the honour should be much sought after. Even if we should admit the proposition that there is nothing new in this world, still we believe there would be plenty of room for discoverers. For though Johnson defines a discoverer as "one that finds out anything not known before," the world is apt to consider a discoverer the person that demonstrates something not known before. The want of appreciation of this distinction has caused much trouble, yet surely the world is right, for we can hardly expect reward for our discovery till we prove its utility to the world.

We are led to these reflections by the perusal of the paper before us, which deals with Morton's claims to the discovery of surgical anæsthesia. In 1842 Long satisfied himself of the possibility of producing anæsthesia during surgical operations by the administration of ether. In 1844 Wells produced anæsthesia with nitrous oxide gas. The former did not try to convince the world of his success. The latter tried and failed. Morton was probably quite familiar with the efforts of Wells, but Wells knew nothing of the use of ether. Neither Wells nor Morton appears to

have known anything of the experiments of Long till they were published in 1849. Jackson's claim to the discovery does not appear worthy of consideration. Morton's first public demonstration of surgical anæsthesia took place on October 16th, 1846, so that in relation to Long he has priority in demonstration, and he is admitted to have had originality of discovery. In relation to Wells. Morton discovered an agent of which Wells knew nothing, and demonstrated the possibility of a condition of which Wells knew, but of the truth of which he failed to convince others. Reviewing these facts after a lapse of fifty-nine years, we have no difficulty in giving the credit of the discovery to Morton, but Morton profited little by it in his lifetime. As Dr. Morton tells us in his paper, "The discovery of surgical anæsthesia, while a boon to the world, was a tragedy to its author and to his family." The tragedy is closed for ever, and all that is left for us is to honour the memory of the chief actor. The "*Memoranda*" before us will materially help to justify this honour, and so we welcome them as a valuable contribution to Medical History.

T. P. C. K.

A Guide to the Administration of Ethyl Chloride. By G. A. H. BARTON, M.D.; Anæsthetist to the North-West London Hospital, &c. London: H. K. Lewis. 1905. 8vo. Pp. 36.

SCARCELY ten years have elapsed since the re-introduction of ethyl chloride as a general anæsthetic, and only a little more than five years since the first cases were recorded in England. This being so, it is not surprising that the methods of using this drug are very imperfectly described in the standard text-books dealing with anæsthesia. Many papers dealing with the administration of this drug have been published, but for the most part they deal merely with the individual experience of the writer. Dr. Barton's paper does not profess to do more than this, but as it does this well we extend to it a hearty welcome. A personal experience of over 1,500 administrations, of all of which apparently careful notes have been taken,

enables him to speak with considerable authority. Comparing chloride of ethyl with the other anæsthetics, Dr. Barton's experience leads him to think "there is no doubt that ethyl chloride comes some way after nitrous oxide gas in point of safety, but it is a good long way ahead of the rest." Personally, after a considerable experience of the use of the drug, we think that this position is scarcely justified. In the hands of a skilled anæsthetist the drug is no doubt safe, but the same thing may be said of almost any of the agents in common use. With ethyl chloride, however, its power and rapidity of action— we might almost say the facility of its administration— render it particularly dangerous in the hands of the unskilled. For ourselves we would prefer as yet an open verdict and await a fuller experience before we finally establish the position of the drug as regards safety.

The most interesting part of Dr. Barton's paper is undoubtedly the description of the method he has devised for the prolongation of ethyl chloride anæsthesia in operations on the mouth and upper air passages. The apparatus is simple and ingenious, while the results appear to be as uniformly good as can be expected in such cases. The use of this method will, we believe, solve many of the difficulties of both the anæsthetist and operator.

In speaking of the after-effects of chloride of ethyl, Dr. Barton says they "are not severe; a little giddiness and headache, and occasionally some vomiting or retching, may follow." If this be an accurate statement of his results we must heartily congratulate him, for in our own experience unpleasant after-effects are the chief drawback to the use of the drug. That we are not singular in this experience is evidenced by the following quotation from Dr. M'Cardie's recent paper before the Society of Anæsthetists:—"These cases, more or less severe, of collapse are often accompanied by much nausea and vomiting. I have seen them only in the recovery room of a dental hospital, and after my own experience of them and watching the cases of others I am sure that they are much more frequent and severe than is generally supposed, observed, or admitted, especially in out-patient practice.

I have questioned the attendants in two large dental departments, and they unanimously stated that the after-effects of ethyl chloride were often severe and prolonged, and that vomiting was frequent. The attendants see more of the patient afterwards than does the anæsthetist."

In conclusion, we must congratulate Dr. Barton on having written a very interesting and thoroughly practical paper, and would earnestly recommend the study of it to anyone who proposes to make use of chloride of ethyl in his practice.

T. P. C. K.

Anatomy: Descriptive and Surgical. By HENRY GRAY, F.R.S., F.R.C.S.; Lecturer on Anatomy at St. George's Hospital Medical School. The Drawings by H. V. CARTER, M.D.; late Demonstrator of Anatomy at St. George's Hospital; with additional Drawings in later editions. Sixteenth Edition. Edited by T. PICKERING PICK, F.R.C.S.; Consulting Surgeon to St. George's Hospital and to the Victoria Hospital for Children: H.M. Inspector of Anatomy in England and Wales: and by ROBERT HOWDEN, M.A., M.B., C.M., Professor of Anatomy in the University of Durham. London, New York, and Bombay: Longmans, Green & Co. 1905. 8vo. Pp. xliii + 1248.

It is seven and forty years since "Gray's Anatomy" first saw the light. To-day it holds its place as one of the best text-books in the English language. We welcome the appearance, at the beginning of another winter session, of the sixteenth edition, the text of which has been carefully revised and in part re-written so as to bring the work up to date in every respect. In particular, Dr. R. A. Bolam, Lecturer on Physiology and Histology in the University of Durham College of Medicine, Newcastle-upon-Tyne, has revised the chapter on general anatomy or histology, with which the volume opens, and furnished it with several new illustrations.

Richness of illustration has always been a feature in "Gray's Anatomy," and is now more so than ever before. Many additional drawings are included in this edition.

principally in connection with the chapters on Embryology, the Nervous System, and the Organs of Sense. Recent editions contained many half-tone drawings, which required for their successful reproduction a highly-glazed heavy paper. These have been replaced by woodcuts and line drawings on the lighter paper used throughout the book, so harmonising more closely with H. V. Carter's original figures.

Very opportunely, this new edition of a deservedly popular work has been published at the beginning of a new winter session. It will, doubtless, prove useful to many a budding medical student in the coming months of anatomical work.

Journal of Anatomy and Physiology. Conducted by SIR WILLIAM TURNER (Edinburgh), PROFESSORS CUNNINGHAM (Edinburgh), HUNTINGTON (New York), MACALISTER (Cambridge), M'KENDRICK (Glasgow). Vol. XL. Third Series. Vol. I. London: Griffin & Co. 1905.

THE appearance of the October number of this journal calls for some notice. In it the fortieth volume is reached and a new series is begun. Sir William Turner, as the senior member of the editorial staff, and the only one remaining of the original editors, contributes a preface to the new series, in which he traces the history of the journal since its first appearance just thirty-nine years ago, November, 1866. At that time there was no journal in this country in which anatomists and physiologists could record their work, as the *Natural History Review*, which published papers on human and comparative anatomy, had ceased to exist. The new journal at first appeared only twice yearly, but with Volume X., when its circulation had improved and its great value had been recognised, it became a quarterly, and as such it has continued to the present time. Up to 1875, when this change was made in the issue, the journal had been devoted mainly to anatomy, taken in its widest sense, but with Volume X. it was determined to give more space to physiology, then beginning to receive more attention in this country than

it had hitherto done. In 1877 the *Journal of Physiology* was started, in which most of the British physiological work has since been published. Still the *Journal of Anatomy and Physiology* has never wanted for valuable papers on physiological subjects, although its strength always lay in its anatomical work. In 1887 the Anatomical Society of Great Britain and Ireland was founded, and the journal was selected as the medium of publication of the Proceedings of the Society, and the two parties to this agreement—the Society and the journal—have ever since mutually assisted one another.

“The journal having successfully surmounted the difficulties of its early career, now that it has reached its fortieth volume, may be regarded as having justified the expectation of the founders and conductors that it would become a recognised medium for the publication of original work in the departments of science that it embraces.” This is regarded as a favourable opportunity to commence a new series in which the journal will appear in a greatly improved form. The size of the page is greatly enlarged, giving more space for illustrations; the paper and printing show a great improvement, while the plates leave little or nothing to desire.

The forty years covered by this journal have been remarkable in the history of anatomy. The advance in embryology, the study by frozen sections, by formaline hardening, by modelling of the viscera, and many other new methods, the enormous improvement in microscopical technic, and the consequent advance in our knowledge of the minute structure of the body, make this period one of great importance.

The *Journal of Anatomy and Physiology* has played a worthy part in helping on this advance, and we trust that it will long continue to flourish, and that in its new form it will perform an even more useful and distinguished part than it has done in the past.

PART III.
MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

*INFANTILE MORTALITY.**

By WILLIAM J. THOMPSON, M.D. (Dubl.), F.R.C.P.I.; Physician to
Jervis Street Hospital, Dublin.

IN bidding the students welcome at the commencement of the 187th Session of this Hospital—the oldest in the city—on behalf of the Medical Staff I wish you all a happy and prosperous period of study. The medical student's time is now so taken up with such a number and variety of studies that frequently he is apt to overlook his clinical work at the hospital until his last year, and then, in the short space of one session, he tries to cram into his brain, already overfull with other subjects, the amount of hospital work that can only be learned and digested in four years of patient, constant, and regular attention and observation. And so, to those of you who come to us for the first time, I strongly recommend you to attend regularly the clinics, to get into the habit of taking for yourselves carefully recorded notes, and never lose an opportunity of following closely the cases that are brought under your observation and notice in the wards. Turning to the more advanced students, I would strongly urge on you, in addition to the work you see and do for yourselves in the wards, to spend as much time as possible in the extern department. Fortunately for you our extern department, from the central situation of the hospital, is extremely large and, of course, very varied. In the dispensary you will find all classes and kinds of both medical and surgical affections. Accidents from the most serious to the most trivial, medical cases both urgent and trifling, are constantly being brought to our doors, which are always open night and day to receive them. You will see diseases of all kinds, from the earliest symptoms to the most advanced stages; disorders of

* An Address introductory to the Session 1905–1906 delivered at Jervis Street Hospital on Tuesday, October 17, 1905.

those who have reached the late period of life, of those in middle life, and of the young. It is about this last group, the infants, that I wish to address you for a brief period. I may state here for the information of the senior students that, in addition to the ordinary facilities for studying diseases of children that you have in the hospital, our staff—recognising the importance of this part of your clinical work—have made arrangements with the staff of the Children’s Hospital, Temple Street, so that you can pursue on a larger scale the studies of children’s diseases in that institution. As it contains about 100 beds, and has a largely attended dispensary, it is an opportunity of which I hope you will take full advantage.

When we consider the number of children—I refer now more particularly to those up to the age of one year—that come under our observation, both in the wards and dispensary, suffering from different diseases and disorders, we cannot but feel saddened when we know that a great number of these affections are preventable. Is it any wonder then that the death-rate of infants is so high ! From the Registrar-General’s Report of last year we find that the average death-rate for 76 great towns of England and Wales was 17.2 per 1,000, while the mortality of infants (under one year old) was 160 per 1,000 births, an average of almost one in six—in other words, out of every six children born one child dies before it reaches the age of twelve months. In certain large towns the death-rate was even higher—in Birmingham 197 per 1,000 births. in Preston 218 per 1,000 births ; in London the highest borough rate was Bermondsey, which was 172 per 1,000, and the lowest was Marylebone with only 94 per 1,000.

COUNTY BOROUGH.	1903			1904		
	Total No. of Births	Deaths under one year of age		Total No. of Births	Deaths under one year of age	
		Total No.	Number in every 1,000 Births		Total No.	Number in every 1,000 Births
DUBLIN ...	9,243	1,409	152	9,523	1,645	173
BELFAST	11,547	1,536	133	11,385	1,761	155
CORK	2,093	235	112	2,109	248	118

Through the courtesy of the Registrar-General, Charlemont House, Dr. Ninian Falkiner has kindly supplied me with the foregoing return, which shows:—For the county boroughs of Dublin, Belfast, and Cork for each of the years 1903 and 1904 (1) the number of births, (2) the number of deaths under one year of age, (3) the number of deaths under one to every 1,000 births.

From this it is seen that the average infant death-rate for Dublin for the past two years is slightly above the average for 76 large English towns—162.5 per 1,000 births. It is higher than Belfast with 144 per 1,000 births, and much higher than Cork with 116 per 1,000 births. The average death-rate for Dublin for the same period is about 24 per 1,000, and about 20 for Belfast and Cork. As stated previously, these figures refer exclusively to large towns and cities, and not to rural districts. It is also a recognised fact, although no statistics on the subject are available, that illegitimacy doubles or even trebles the chance of an infant dying before its first birthday. Bailie Anderson, Convener of the Public Health Committee, Glasgow, stated in a paper read before the British Medical Association this year in Leicester that in investigating this matter he communicated with the Consuls of 60 of the leading cities of the world, and he found in such places as Buenos Ayres, Barcelona, Stockholm, and Christiania that the infant mortality was much less than in England or Scotland. It is a remarkable fact, pointed out by Dr. Arthur Newsholme, Medical Officer of Health for Brighton, that whereas for the past half century there has been a marked decline in the general death-rate of the community, about 16 per cent., the infantile mortality has remained stationary. Medical Officers of Health in their annual reports are constantly drawing public attention to this matter, and some of them in very forcible language. For instance, Dr. H. Henwood, Medical Officer of Health for Stoke Newington, stated recently in his annual report that “if the death-rate amongst calves was only one-half of that which prevails amongst infants, the farmer would before very long have to entirely give up the business of rearing cattle.”

This high mortality amongst infants is a question of extreme importance, both from a Public Health point of view and from the physical deterioration aspect—about the latter we are at present hearing a great deal, and deservedly so. We must not forget that while thousands of infants perish annually there are thousands of others who barely survive, and these later on, when

they face the hard struggle for existence, grow up both mentally and physically weak, and it is from this class that our charitable institutions and asylums are being filled, and, indeed, in many cases overcrowded. Tuberculosis in its different forms, and emigration, deprive our island of a great number each year of what may be said to be the flower of our people, but the high death-rate amongst infants, and the weakness and debility contracted during the first year of life, take another large slice off our population. Is it any wonder, therefore, that our population is steadily decreasing? A great move has been made, and we are all pleased to know with some success, to diminish the ravages of tuberculosis by the open-air treatment, isolation, and such like; and just at present efforts are being made to foster home industries, to improve our agricultural products, and in other different ways (we all sincerely hope these efforts will be crowned with success), and so try to prevent the drain of emigration. Although very much has been done in England and Scotland, and in, I may say, every country in Europe and in the United States, not so much has been done as might directly be done in our city to try and remedy this evil of high infant death-rate. As citizens of the metropolis, we trust that Dublin may make a movement in this matter, for we know from experience that our citizens are always first to undertake anything that is philanthropic and charitable.

We may, perhaps, first inquire what are the causes of this enormous infantile mortality, for I have shown that it is prevalent in all large towns. The causes are exceedingly numerous and varied, but it is universally admitted that improper artificial feeding is the most important factor, owing, no doubt, to the unfortunate decline in breast feeding. We have also got overcrowding, insanitary surroundings, tenement dwellings, ill-health of one or other of the parents, and many other like reasons. It is computed that fully three-fourths of the deaths of children under twelve months old occur amongst those who are artificially fed. By artificial feeding I mean any feeding other than the mother's milk. One other recognised fact is that the high death-rate is practically confined to the working and lower classes, the infant death-rate amongst the upper and middle portion of the community is about normal. This great mortality and widespread production of disease can be to some extent prevented by the mothers nursing their babies, and, failing this, by the proper use of pure cow's milk. The former method, we may call nature's

method, is the one to be recommended if at all possible, for the latter method is only a makeshift. In the year 1901 the Council of the Dublin Sanitary Association investigated this matter very carefully, and from their report it is shown that out of a total of 108,398 infants' deaths in the ten years, 1889-1899, no fewer than 62,583 of the deaths, or more than one-half, were due to diseases which in the ordinary course are attributable to the result of improper feeding.

Take the case of an infant, so-called artificially fed, aged, say, four months, which we see so frequently in our outdoor department, and what do we find? Shortly after birth, three or four weeks, the mother finds she is unable to nurse the infant; she never for a moment thinks of seeking medical advice; she weans the baby, substituting the bottle. The child is fed at irregular hours and in varying quantities with milk diluted sometimes more for one meal than for another; the bottle, most likely with a long tube, is anything but clean, and there is no attempt made at home to preserve the milk from souring. In addition to this, the child is given crusts of bread, potatoes, and such like, or, as the mother aptly describes its dietary, "it gets the run of the house in addition to the bottle," the result follows that the child is starved. If we consider that small and delicate organ, the infant's stomach, we can only conclude that the child is being starved for want of suitable food, and is, as one would expect, very weak and ill. Then it is doctored at home by doses of castor oil, chalk mixtures, &c., and, as a last resource, it is brought to one of our city hospitals with the fond hope that it will be made well by a bottle of medicine. Some medicine, of course, is given, but what is more important, the mother gets instructions, either printed or typed, about the proper feeding and care for the age of the child: result, child is given the medicine, but the directions about the dietary are overlooked, or, if commenced, are not carried on for a sufficient length of time. In other instances—and this occurs more frequently in large manufacturing towns than here—the mother has to go out to work after convalescence, and is obliged to leave the infant to people who do not take either the trouble or care of properly looking after it. It must also be remembered that the mothers, in this class of the community, prior to their marriage, had no opportunity of learning the house-keeping for their position in life, still less of learning how to care the baby. We all recognise the importance of mothers nursing

their infants, and they should be encouraged to do so, as is the practice in some of the departments of France, where prizes are awarded to those who breast-feed. But all mothers cannot do this, some from ill-health, some from following different occupations, or working in factories, and the like.

Human milk is by far the best food for infants. It is Nature's food, an unique and wonderful food, for which the science of man has up to the present been unable to manufacture even a secondary substitute. As Dr. M'Cleary, Medical Officer of Health for Battersea, scientifically puts it—"Although physically the child is separated from the mother at birth, physiologically separation only takes place at weaning, and so from a physiological standpoint the artificial-fed baby is a premature child, and anything but maternal nursing is foreign to its digestion." Besides, it is found that the blood of a breast-fed infant has a greater bactericidal action than that of the hand-fed, and it is our clinical experience that suckling infants have a marked immunity from infectious disease. Dr. Hope found that in Liverpool the deaths from diarrhoea "amongst children under three months old, either wholly or partially fed on artificial food, are 15 times as great as they are amongst an equal number of infants fed on the breast." Undoubtedly, as regards infant feeding, nature is, for so far, superior to art. The point therefore is, as far as we can, to take nature for our guide.

The mother who is unable to breast-feed her infant has to make a choice of what she would substitute for human milk, and she finds that she has three classes of food to select from :—

- (a) Preparatory foods, in great variety.
- (b) Condensed milk.
- (c) Cow's milk, more or less modified.

It is at this period that the medical practitioner can do a great deal if consulted ; but, unfortunately, his advice is seldom or never sought for until the baby becomes seriously ill, and that treatment becomes necessary. If only parents and people generally could be got to understand, as Dr. Chaplin points out, "that anything aside from breast milk that is put into an infant's stomach is a foreign substance," they would see that it is necessary to obtain a substitute as closely akin to human milk as possible.

Of the three substitutes just mentioned, both the concensus of public opinion and clinical experience, as has been demonstrated in the working of infant milk *depôts*, goes to show that cow's milk

properly cared and modified is the nearest approach we have at present to human milk. I have said properly cared, and by that I mean the care milk receives from the time when it leaves the cow's udder until it reaches the child's stomach. You will agree with me that during this period milk is subjected to contamination. Take, for instance, the ordinary process that goes on, say at this season of the year, amongst a large proportion of dairy cattle. The cows are at grass ; they are never groomed ; their udders are dirty ; the milker may possibly not have washed his hands before commencing, or may have a septic cut or wound about his fingers ; he goes from one cow to another, and so carries with him dirty epithelium, dust, germs, bacteria—and, as Dr. Leslie Mackenzie, Medical Member of the Scottish Local Government Board, describes it—"the various dirt of the civilised human are at every hand reinforced by the inevitable dirt of the domesticated cow." How can the milk escape being contaminated ? And then it has to be conveyed to the city dairies, and delivered in the ordinary way, and during this time probably further contamination takes place. Municipal authorities prevent milk being diluted, and we all trust, I am sure, that they will have the power to inspect every dairy farm that sends milk into cities. Professor Sidwick pithily described the milk supply to Boston, some years ago, thus—"Public milk supplies may not be legally watered, but they may be stale, or polluted, or infected."

This class of milk is, unfortunately, the kind mothers frequently get for their babies. Is it any wonder, then, that in a short time the delicate stomach of the infant becomes upset ? In this picture I have drawn I do not especially refer to Dublin—for we know there are quite a number of dairy farmers, and I believe this number is increasing, who are most careful about milking, the proper cleansing of vessels, carriage of milk, &c.—I speak of large cities generally, both in this country, the Continent, and America.

I. A pure city milk supply is, therefore, one essential in proper infant feeding which will tend towards the decrease of infant mortality.

II. Any improvements made for the health of the community living in tenements and congested districts also tends to diminish the ordinary death-rate, and, as a matter of course, that of infants.

Dublin can boast of having done a great deal in this direction.

Through the munificence of Lord Ardilaun, Lord Iveagh, and Mr. James Talbot Power, D.L., as we are all aware, whole areas of insanitary dwellings have been torn down, and parks, open spaces, and substantial buildings substituted. The Corporation has also done a great deal in this way, and are still extending their work. Private enterprises, such as the Company for the Housing of the Very Poor, the Dublin Artisans' Dwelling Company, have also, each in their own line, accomplished much in this direction, and are still carrying on their good work.

III. It is found that when the temperature of the earth, four feet below the surface, reaches 56 degrees Fahrenheit, diarrhoeal disease commences, and it is this which is so prevalent and so fatal in the months of July, August, and September. Through the initiative of Sir John Moore, M.D., Trinity College keeps a daily record of the temperature, and the Municipal and Urban Councils have taken action in this matter. It is to be hoped this move will have some influence in diminishing the high diarrhoeal death-rate during these three months.

IV. Our lying-in-hospitals, some dispensaries, general hospitals, and private practitioners have printed instructions how to care the baby. These instructions are given to suitable cases, and in this way some good is done.

Suffering humanity owes a great deal to the initiative of the French medical profession, and it was in France, in the year 1890, that Professor Hergott first instituted an establishment for the supply of sterilised milk for those infants for whom breast-feeding was impracticable, so as to try to reduce the excessive death-rate, as this question was of national importance on account of the unusually low birth-rate. Other institutions with a similar object, but on a slightly different basis, followed, and, in 1892, Dr. Variot opened the first Goutte de Lait in Paris. Two years later Dr. Leon Dufour established at Fécamp the first Provincial Goutte de Lait. These Gouttes de Lait in France correspond to what in England and Scotland are called "Infants' Milk *Depôts*." These are simply dispensaries from which milk is distributed, modified to suit the age of the baby, to those mothers who are not able to breast-feed their infants, and who are in such circumstances and surroundings that they cannot afford out of their meagre livelihood any additional burden for the feeding

of the baby. In some institutions those who take these advantages are divided into three classes :—

1. The gratuitous—for the very poor.
2. Half-payment section—for those who are able to contribute something.
3. Paying section—for those who can afford to pay the full price, which includes cost of milk and cost of preparation.

Of course it is understood that these three sections receive the same quality of milk, or modified milk, as the case may be.

The following is the routine of the infant milk *depôts* in England :—

1. The milk is got from a reliable source, and in most cases those who supply the milk are subjected to certain stringent regulations about the grooming of the cows, cleanliness in the milking process, cooling, properly prepared vessels to receive the milk, and rapid transport.

2. The milk on arrival at the *depôt* is strained and filtered to prevent any mechanical pollution.

3. It is then modified by the addition of water, cream, and sugar, so as to suit the age of the infant.

4. After this process it is bottled, and the quantity in each bottle is likewise arranged for the age of the infant. The bottles, being closed with stoppers, are placed in the sterilising chamber for a period varying from 15 to 30 minutes. When taken out the bottles are rapidly cooled in a cooling tank, and are then ready to be placed in wire baskets, which hold from six to nine each, and contain a 24 hours' supply for the infant. This is handed out or delivered, and next day the basket of empty bottles is returned and a fresh supply is obtained. In France each baby is required to be brought to the *depôt* at least once a week, when it is medically examined, weighed, &c. In this country, while this is strongly recommended, it cannot, as on the Continent, be enforced.

These infant milk *depôts* are of two kinds—those under municipal control and those worked by private or philanthropic enterprise. In the year 1893 the Hon. Nathan Straus, a well-known philanthropist of New York City, established in a comparatively small way an “Institution to place milk suited for infant nutriment within reach of the poor.” This has now become one of the largest, best-managed, and best known establishments in the world. In 1898, under the guidance of

Dr. F. Drew Harris, Medical Officer of Health, the St. Helen's Corporation, after a deputation had gone to France, visited several Gouttes de Lait, and were satisfied of the worth of these institutions, opened the first infant milk *depôt* in this country. *Depôts* were then rapidly opened, all under municipal enterprise, in Liverpool, Ashton-under-Lyne, Battersea, Bradford, Leith, Glasgow, &c. The first private *depôt* in this country was established in 1903 in York, and in Finsbury in 1904. I have myself visited the infant milk *depôt* in York. The greatest trouble and care were taken to show me the working of the institution, and I was very pleased with what I saw. It is situated in a poor district of the city, called Billygate, which would correspond to Cork Street and its neighbourhood in Dublin.

You may ask what have been the results of the establishing of these infant milk *depôts*. The Hon. N. Straus, in an exceedingly interesting paper on the work of his institution in New York City, at the meeting of the British Medical Association this year, says "that in 1892, the year before I began the systematic prosecution of my work, the infant death-rate for the summer quarter reached the appalling figure of 136.1 per 1,000 of the population under 5 years of age. Last year the number was reduced to 74.5 per 1,000. In other words, had the infant mortality of the same quarter been reproduced relatively to the population in 1904, the number of deaths would have been 8,725 instead of 4,805. I do not think it is a hasty induction from the facts to claim that the most important element in the saving of these 3,920 infant lives has been the improvement of the character of the milk supplied to the children of the New York poor." The French physicians claim that there is a very great reduction in the infant mortality since the institutions were established. Dr. Drew Harris, of St. Helen's, states that in the year 1902 the death-rate of infants amongst the children receiving milk from the *depôt* was 82 per 1,000 births, whilst the general borough death-rate was 167 per 1,000. Dr. Hope, Medical Officer of Health for Liverpool, in his annual report for 1903, states that the death-rate amongst the *depôt*-fed children was 78 per 1,000. Dr. M'Cleary, Medical Officer of Health for Battersea, in his report for 1902 has the same pleasant statement to make.

The practical point is this, that if such institutions are carried out successfully, and are doing good work in France, Spain, Belgium, the United States, England, and Scotland, could not such

an institution be established in Dublin? There are two well-known facts in our favour—(1) No mother is so fond of, and devoted to, her baby as an Irish mother. (2) No people in the world are so charitable as the Dublin people. With these two data I fail to see why something in the way of starting an infants' milk *depôt* in the city should not be done. As matters are at present, our death-rate among infants under one year is enormous, almost one in six. In other countries and large cities an effort has been successfully made to diminish that death-rate. Nothing, so far, has been done in Dublin in this direction. Are we, who have such a name for charitable citizens, going to do anything?

CHRONIC BACILLUS-TYPHOSUS-BEARERS.

DR. LENTZ, of Idar-on-the-Nahe, contributes to the fourteenth volume of the *Klinisches Jahrbuch* (Jena: Gustav Fischer, 1905) an instructive and suggestive paper under the above title. The object of the paper is to show that convalescents from enteric fever carry about with them the germs of the malady perhaps for many months after they have themselves quite recovered from their illness. These facts have been established by bacteriological investigation. Since 1904 certain suggestions made by him for dealing with these chronic infection-bearers have been put in practice in the principality of Birkenfeld. These suggestions are as follows:—(1) An abundant supply of disinfectants, for the disinfection of all excreta from the infection-bearers, provided at the public expense; (2) disinfection of the latrines in the houses inhabited by such persons by means of chlorinated lime—if possible every three months, at all events immediately before the latrines are emptied—the cost of this to be borne likewise by the public funds; (3) police notification; (4) continued control through the institute for bacteriological investigations; (5) strict exclusion of chronic infection-bearers from the milk industry generally, the milk from farms where such persons are employed to be debarred from the dairies.—*Brit. Med. Journ.*, October 21, 1905.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SIR THORNLEY STOKER, M.D., F.R.C.S.I.

General Secretary—JAMES CRAIG, M.D., F.R.C.P.I.

SECTION OF PATHOLOGY.

President—JOSEPH O'CARROLL, M.D., F.R.C.P.I.

Secretary—PROFESSOR WHITE, F.R.C.S.I.

Friday, October 27, 1905.

The PRESIDENT in the Chair.

The Relation between Clinical Medicine and Pathology.

THE PRESIDENT delivered the opening Address on the above.
[It will be found at page 417.]

Spirochæte in Syphilis.

PROF. MCWEENEY said since the discovery by Schaudinn last spring that a particular variety of spirochæte—the *Sp. pallida*—is of regular occurrence in syphilitic chancres, the observation has been confirmed by at least one hundred independent investigators working in all parts of the world; and the organism has now been found not merely in primary lesions but in the associated indolent buboes, mucous tubercles, unbroken cutaneous roseolæ, papules, and other forms of eruption, and also in the blood of cases in the secondary stage. Moreover, it has been found in the spleen, liver, and other internal organs of syphilitic fœtuses. In view of the probability, that the organism may turn out to be the cause of syphilis, he thought it of interest to show some specimens which he had taken from chancres and condylomata at the Lock Hospital, from cases under the care of Drs. H. FitzGibbon and Pugin Meldon, to whom, as well as to Col. Baker, Major M'Leod, and Capt. Falkiner, R.A.M.C., the officers in charge of the Arbour Hill Military Hospital, he expressed his thanks for permission to use the material under their control. By way of contrast he showed *Spirochæte refringens*, a somewhat thicker and less closely coiled form from non-specific condylomata. Schaudinn has quite

recently described locomotive organs in these parasites—terminal cilia in the case of *Sp. pallida*, and an undulating membrane in the case of *Sp. refringens*. The exhibitor showed, by way of illustration, a specimen of a huge spirillum, 45 μ . long, with cilia on each end, which he had cultivated from sewage.

Blood containing Mast-Cells.

PROF. MCWEENEY showed specimens made from the blood of a man aged thirty-four (O'B.), a patient of Dr. Martin Dempsey, in the Mater Hospital, suffering from anæmia of obscure nature, attended with attacks of bleeding from the lower bowel, and slight albuminuria. The blood-count was very remarkable:—Reds, 2,856,000; whites, 11,300; polynuclears, 46.5 per cent.; small lymphocytes, 15.3; large mononuclears, 27; eosinophils, 7.2; mast-cells, 2.6.—the coarsely granular cells being thus 9.8 per cent. of all leucocytes. There was marked mononucleosis, especially prominent being the large hyaline mononuclears. There was marked granular degeneration of the reds in many cases (punctate basophilia), but normoblasts were very scarce and megaloblasts were absent. Hg 45 per cent. After a week under treatment with iron and arsenic the mast-cells had undergone marked diminution, specimens being hard to find, but the eosinophils were as numerous as before.

Unusual Form of Senile Tuberculosis.

PROF. MCWEENEY also showed this specimen, which consisted of the lung of a woman, aged seventy-five, who in the street was suddenly seized with profuse hæmorrhage from the mouth and nose, and died immediately after admission to hospital. At the autopsy a tubercular condition of the lower part of the right lung was found, which had converted most of the middle lobe into a dense cicatricial tissue of greyish hue. The lower lobe was studded with very large slate-grey tubercles, and there was a single small cavity as big as a hazel nut which had ulcerated into a branch of the pulmonary artery and given rise to the fatal hæmorrhage. The cavity was lined with caseous matter, swarming with tubercle bacilli, many of which were peculiarly branched. The occurrence of fatal pulmonary hæmorrhage from tuberculosis in a patient aged seventy-five seemed sufficiently unusual to justify its being brought forward.

SECTION OF SURGERY.

President—SIR ARTHUR CHANCE, P.R.C.S.I.

Sectional Secretary—E. H. TAYLOR, F.R.C.S.I.

Friday, November 3, 1905.

THE PRESIDENT in the Chair.

THE PRESIDENT made some introductory remarks.

Gastric Surgery.

MR. T. E. GORDON, having briefly referred to cases of gastric perforation, gastrectasis due to simple pyloric stenosis, and recurring hæmatemesis, went on to discuss at some length the surgical treatment of chronic ulcer of the stomach as apart from its complications. He stated that this was a subject about which there was still room for difference of opinion. A conclusion was to be arrived at by considering chiefly three things—i.e., surgical experience, medical experience, and the relative risks of operative and non-operative methods. He had investigated the after-history of a number of cases treated by physicians in a general hospital, and the result of this investigation seemed to show that such treatment was generally unsuccessful.

In discussing relative risks, he gave it as his opinion that there was, just now, a tendency to overrate the frequency of perforation and fatal hæmorrhage, and a tendency, on the other hand, to underestimate the dangers of gastro-enterostomy. He described a remarkable case in which a hernia had occurred after a posterior gastro-enterostomy. A considerable length of jejunum had passed under the anastomosis from right to left (not into the lesser sac of the peritoneum). The patient recovered, but the ultimate result was not likely to be good.

Mr. Gordon, in conclusion, gave an account of his experience of the surgical treatment of gastroptosis. He pointed out that this condition was not necessarily a part of a general neurotic state, and further, that the neurasthenia, when present, might be the primary fault and might develop secondarily. Gastro-enterostomy was likely to fail in cases primarily neurotic, but might succeed where the prolapse of the stomach was primary.

Gastro-enterostomy.

MR. JOHN S. MCARDLE communicated a paper on the above subject, and said that the frequency of post-operative

troubles rendered it imperative to study every detail in the after-history of cases of this kind.

He alluded first to a case in which he carried out the anterior operation for the relief of violent hæmorrhage from the stomach. This was his first experience of the operation, and he selected this method on account of complicated adhesions, which would render the posterior operation a very long one. The immediate result was not very favourable; a vicious circle was established and persistent vomiting of bile was the result. Four weeks after the first operation he opened the abdomen, and found coils of the jejunum twisted out of place and adherent. The freeing of adhesions, with reposition of the intestines and fixation, resulted in complete relief, and the patient is now, 13 years after operation, in perfectly sound health.

From this time Mr. McArdle has always carried out the posterior operation, and to prevent any chance of looping or torsion on the small intestine he has left the shortest stretch of intestine possible between the end of the duodenum and the point of anastomosis.

He related cases to illustrate how this type of procedure prevented the occurrence of the distressing symptoms referred to.

He then related cases which had been carried out by other operators, in which long stretches of the jejunum had been left to sag downwards into the abdomen, or become twisted upon themselves. He detailed the methods necessary in these cases to relieve the symptoms dependent on the formation of the vicious circle.

He concluded his communication by advocating posterior gastro-enterostomy with a short loop of the jejunum as the most perfect method, as, since the adoption of this method in 1904, he has never had any instance of the development of a vicious circle in his cases, all of which were carried out with Murphy's button, and without any mortality.

MR. EDWARD H. TAYLOR alluded to some points of importance in the operation of posterior gastro-enterostomy, notably, the advisableness of leaving a short loop of bowel between the duodeno-jejunal flexure and the site of the anastomosis, and of suturing the jejunum to the stomach for some distance on each side of the latter. By adopting these precautions the risk of a vicious circle being established was almost nil. He referred to a type of female stomach which he considered not uncommon, and believed to be

intimately associated with tight lacing, viz.—one in which the gastric orifices approximated each other, the lesser curvature being sharply bent upon itself and the pyloric segment of the viscus represented by a large dependent pouch.

MR. JAMESON-JOHNSTON discussed the relative values of douching and sponging in cases of extravasation of the stomach contents. The choice of procedure, he thought, depended on the amount of the latter. With a limited extravasation he favoured sponging, if extensive he preferred douching.

MR. WHEELER referred to the views put forward by Moynihan on the occasion of the recent meeting of the British Medical Association at Leicester.

MR. HAUGHTON stated that he had had a number of cases with considerable neurotic tendency, in which he had found adhesions giving rise to mechanical obstruction and accompanying enteroptosis. Many individuals supposed to be neurotic might really have a physical cause for the disorder in adhesions. In one of his cases a vicious circle had resulted from the jejunum being nipped by the margins of the aperture in the transverse mesocolon. He employed a Murphy button for effecting an anastomosis between the two limbs of the intestinal loop, but death followed in consequence of gangrene outside the zone of pressure.

MR. KENNEDY expressed himself in favour of Murphy's button, as its employment resulted in the formation of a round punched out hole, whereas the suture method, without this mechanical appliance, left merely a slit.

THE PRESIDENT, in discussing the communications, referred to the widely varying results which were obtained after similar operations for similar complaints. He would like more information on the subject of feeding after operation; he always felt somewhat uncomfortable until seven days had elapsed.

MR. GORDON, in reply, stated that it was his practice to begin feeding practically at once. Sips of hot water after the operation were followed next day by teaspoonfuls of albumin water every hour. From this on the amount of liquids given was rapidly increased, and solid food was allowed after the tenth day.

MR. McARDLE, in reply, stated that he allowed as much fluid as the patient desired from the start. He always employed the Murphy button, and alluded to the rapidity with which it could be introduced.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by the EDITOR.

VITAL STATISTICS

For four weeks ending Saturday, November 4, 1905.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending November 4, 1905, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 21.7 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,959. The deaths registered in each of the four weeks ended Saturday, November 4, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality.

TOWNS, &c.	Week ending				Aver- age Rate for 4 weeks	TOWNS, &c.	Week ending				Aver- age Rate for 4 weeks
	Oct. 14	Oct. 21	Oct. 28	Nov. 4			Oct. 11	Oct. 21	Oct. 28	Nov. 4	
22 Town Districts	17.0	17.3	20.1	21.7	19.0	Lisburn -	13.6	-	22.7	13.6	12.5
Armagh -	-	20.6	13.7	6.9	10.3	Londonderry	12.4	26.0	16.1	21.1	18.9
Ballymena	14.4	9.6	9.6	9.6	10.8	Lurgan -	4.4	8.9	8.9	17.7	10.0
Belfast -	17.7	18.9	22.2	18.9	19.4	Newry -	25.2	12.6	21.0	37.8	24.1
Clonmel -	10.3	-	25.6	46.2	20.5	Newtown- ards	22.9	28.6	40.1	28.6	30.0
Cork -	13.7	13.7	25.3	21.2	18.5	Portadown -	5.2	-	5.2	15.5	6.5
Drogheda -	8.2	24.5	12.3	20.4	16.4	Queenstown	13.2	26.4	19.8	19.8	19.8
Dublin - (Reg. Area)	18.3	18.3	17.9	25.6	20.0	Sligo -	28.8	4.8	19.2	19.2	18.0
Dundalk -	12.0	19.9	4.0	4.0	10.0	Tralee -	10.6	15.9	-	15.9	10.6
Galway -	27.2	-	27.2	19.4	18.5	Waterford -	25.3	11.7	35.1	13.6	21.4
Kilkenny -	4.9	4.9	19.7	29.5	14.8	Wexford -	23.3	23.3	37.4	23.3	26.8
Limerick -	15.0	19.1	15.0	23.2	18.1						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, November 4, 1905, were equal to an annual rate of 1.0 per 1,000, the rates varying from 0.0 in seventeen of the districts to 3.9 in Galway. Among the 130 deaths from all causes in Belfast are one from measles, one from scarlet fever, one from pyrexia (origin uncertain), 2 from enteric fever, and 3 from diarrhoeal diseases.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, November 4, amounted to 223—121 boys and 102 girls; and the deaths to 195—97 males and 98 females.

DEATHS.

The deaths registered during the week ended Saturday, November 4, represent an annual rate of mortality of 26.8 in every 1,000 of the population. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the area, the rate was 25.6 per 1,000. During the forty-four weeks ended Saturday, November 4, the death-rate averaged 22.4 and was 3.3 below the mean rate for the corresponding portions of the ten years 1895–1904.

Amongst the deaths registered were 2 from enteric fever and 4 from diarrhoeal diseases—the deaths from enteric fever in each of the 3 preceding weeks had been 1, 4, and 0, and the deaths from diarrhoeal diseases had been 4, 1, and 3. One death from influenza and one death from cerebro-spinal fever were registered.

There were 3 deaths from lobar pneumonia, 6 deaths from broncho-pneumonia, and 9 deaths from *pneumonia* (not defined).

The deaths from tuberculous disease, which, in the previous 3 weeks, had been 30, 25, and 25, were 33 in the period under notice, and included 7 deaths from tubercular phthisis, 17 deaths

from *phthisis*, 4 deaths from tubercular meningitis, and 5 deaths from other forms of the disease.

There were 2 deaths from carcinoma, one from sarcoma, and 4 deaths from cancer (undefined).

The deaths of 6 infants, who were prematurely born, were registered.

Of 12 deaths from diseases of the brain and nervous system, 5 were of children under 5 years of age from *convulsions*, 4 of the latter occurring in infants under one year.

There were 29 deaths from diseases of the heart and blood vessels, and 37 deaths were due to bronchitis.

There were 3 deaths from accidental causes, one of these being a death from accidental poisoning.

In 4 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases comprise the death of one child under one year of age and the deaths of 3 persons aged 60 years and upwards.

Fifty-four of the persons whose deaths were registered during the week were under 5 years of age (34 being infants under one year, of whom 11 were under one month old) and 64 were aged 60 years and upwards, including 17 persons aged 70 and upwards, of whom 3 were octogenarians, and 2 (females) were stated to have been aged 90 and 91 years, respectively.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious disease notified under the "Infectious Diseases (Notification) Act, 1889," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended November 4, 1905, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal meningitis	Total
City of Dublin	Oct. 14	-	•	•	11	-	-	3	-	2	16	4	-	•	•	•	2
	Oct. 21	-	•	•	9	-	-	1	-	1	16	15	-	•	•	•	3
	Oct. 28	-	•	•	10	-	-	5	-	3	29	29	-	•	•	•	5
	Nov. 4	-	•	•	12	-	-	2	-	4	15	13	-	•	•	•	3
Rathmines and Rathgar Urban District	Oct. 14	-	•	•	-	-	-	-	-	-	-	1	-	•	•	•	1
	Oct. 21	-	•	•	1	-	-	-	-	-	-	1	-	•	•	•	3
	Oct. 28	-	•	•	-	-	-	-	-	-	1	-	-	•	•	•	1
	Nov. 4	-	•	•	1	-	-	-	-	-	2	-	-	•	•	•	1
Pembroke Urban District	Oct. 14	-	-	-	7	-	-	-	-	2	-	2	-	•	-	-	1
	Oct. 21	-	-	-	1	-	-	-	-	-	-	-	-	•	-	-	1
	Oct. 28	-	-	-	1	-	-	-	-	-	-	-	-	•	-	-	1
	Nov. 4	-	-	-	1	-	-	1	-	-	-	1	-	•	1	-	4
Blackrock Urban District	Oct. 14	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
	Oct. 21	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	-
	Oct. 28	-	•	•	2	-	-	-	-	-	-	-	-	•	•	•	2
	Nov. 4	-	•	•	2	-	-	-	-	-	-	-	-	•	•	•	2
Kingstown Urban District	Oct. 14	-	•	•	1	-	-	-	-	-	-	2	-	•	•	•	3
	Oct. 21	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	3
	Oct. 28	-	•	•	-	-	-	-	-	-	-	-	-	•	•	•	3
	Nov. 4	-	•	•	-	-	-	-	-	-	-	1	-	•	•	•	3
City of Belfast	Oct. 14	-	•	•	19	-	-	4	5	16	23	9	-	•	•	•	5
	Oct. 21	-	•	•	23	-	-	3	2	9	10	6	-	•	•	•	2
	Oct. 28	-	•	•	17	-	-	2	1	4	10	7	1	•	•	•	2
	Nov. 4	-	•	•	21	-	-	7	-	6	11	9	-	•	•	•	2

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended November 4, 1905, 3 cases of measles were admitted to hospital and 16 patients remained under treatment at its close.

Eleven cases of scarlet fever were admitted to hospital, 10 were discharged, and 62 cases remained under treatment at the close of the week. This number is exclusive of 20 convalescents who remained under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital.

Two cases of typhus remained under treatment at the close of the week.

Five cases of diphtheria were admitted to hospital, 2 were discharged, and 27 patients remained under treatment at the close of the week.

Thirteen cases of enteric fever were admitted to hospital, 12 were discharged, there were 2 deaths, and 66 cases remained under treatment in hospital at the end of the week.

In addition to the above-named diseases, 12 cases of pneumonia were admitted to hospital, 6 were discharged, there were 2 deaths, and 27 cases remained under treatment at the close of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended November 4 in 76 large English towns, including London (in which the rate was 16.6), was equal to an average annual death-rate of 15.6 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 17.6 per 1,000, the rate for Glasgow being 19.3, and for Edinburgh 15.2.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of October, 1905.

Mean Height of Barometer,	-	-	-	30.069 inches.
Maximal Height of Barometer (11th, at 9 a.m.),	30.547	„		
Minimal Height of Barometer (30th, at 2 30 p.m.),	28.965	„		
Mean Dry-bulb Temperature,	-	-	-	45.8°.
Mean Wet-bulb Temperature,	-	-	-	43.9°.
Mean Dew-point Temperature,	-	-	-	41.8°.
Mean Elastic Force (Tension) of Aqueous Vapour,	.271	inch.		
Mean Humidity,	-	-	-	86.6 per cent.
Highest Temperature in Shade (on 9th),	-	62.9°.		
Lowest Temperature in Shade (on 21st),	-	29.0°.		
Lowest Temperature on Grass (Radiation) on				
21st,	-	-	-	23.0°.
Mean Amount of Cloud,	-	-	-	55.7 per cent.
Rainfall (on 16 days),	-	-	-	1.196 inches.
Greatest Daily Rainfall (on 2nd),	-	-	-	.368 inch.
General Directions of Wind,	-	-	-	W., N.W.

Remarks.

October, 1905, was a quiet, cool, but favourable month. The mean temperature was 2.2° in defect, but this was due to almost continuously low temperatures after the 13th, more especially at night, when ground frost occurred on as many as 13 occasions. The 4th was the only stormy day. The rainfall, while small, was frequent, as there were 16 days on which .005 inch or up-

wards was measured. It was only 40.7 per cent. of the average, whereas the rainy days were 88.9 per cent. of the average. The estimated duration of bright sunshine was 110.75 hours, or a daily mean value of 3.6 hours. It is noteworthy that in East Wicklow the rainfall of the month was very scanty, only .707 inch being recorded at Newcastle and only .641 inch at Greystones.

In Dublin the arithmetical mean temperature (47.2°) was very decidedly below the average (49.4°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 45.8° . In the forty-one years ending with 1905, October was coldest in 1892 (M. T. = 44.8°) and in 1896 (M. T. = 45.0°). It was warmest in 1876 (M. T. = 53.1°). The M. T. in 1898 was 52.8° . In 1904 it was 51.6° .

The mean height of the barometer was 30.069 inches, or 0.229 inch above the corrected average value for October—namely, 29.840 inches. The mercury rose to 30.547 inches at 9 a.m. of the 11th, and fell to 28.965 inches at 2 30 p.m. of the 30th. The observed range of atmospheric pressure, was, therefore, 1.582 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 45.8° , or 7.9° below the value for September, 1905. The arithmetical mean of the maximal and minimal readings was 47.2° , compared with a thirty years' average of 49.4° . Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* \times .485), the mean temperature was 47.0° , or 2.2 below the average mean temperature for October, calculated in the same way, in thirty years, 1871–1900, inclusive (49.2°). On the 9th the thermometer in the screen rose to 62.9° —wind, W.; on the 21st the temperature fell to 29.0° —wind, W., S.W. The minimum on the grass was 23.0° on the 21st.

The rainfall was 1.196 inches, distributed over 16 days; both the rainfall and the rainy days were below the average. The average rainfall for October in the thirty-five years, 1866–1900, inclusive, was 2.940 inches, and the average number of rainy days was 18. In 1880 the rainfall in October was very large—7.358 inches on 15 days. In 1875, also, 7.049 inches fell on 26 days. On the other hand, in 1904 only .454 inch fell on 11 days, in 1890 only .639 inch fell on but 11 days; in 1884, only .834 inch on but 14 days; and in 1868 only .856 inch on 15 days. It will be seen from the above figures that the scanty rainfall of October, 1904, established a record deficiency for this month in Dublin.

High winds were noted on 7 days, but attained the force of a gale on only one occasion—the 4th. The atmosphere was more or less foggy in Dublin on the 9th, 10th, 20th, 21st, 22nd and 25th.

The duration of bright sunshine was estimated at 110.75 hours, compared with 127.25 hours in 1900, 115.25 hours in 1901, only 84.25 hours in 1902, 132.75 hours in 1903, and 93.25 hours in 1904. Solar halos were seen on the 1st, 9th and 25th. Lightning occurred on the evening and night of the 29th.

The rainfall in Dublin during the ten months ending October 31st amounted to 20.462 inches on 161 days, compared with 12.366 inches on 123 days during the same period in 1887 (the dry year), 27.863 inches on 177 days in 1900, 20.466 inches on 145 days in 1901, 24.481 inches on 172 days in 1902, 27.882 inches on 196 days in 1903, 19.601 inches on 163 days in 1904, and a thirty-five years' average of 22.820 inches on 163 days.

At the Normal Climatological Station in Trinity College, Dublin, the mean height of the barometer was 30.067 inches, the range of atmospheric pressure being from 30.550 inches at 9 a.m. of the 11th to 29.006 inches at 9 a.m. of the 30th. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 46.9°. The arithmetical mean of the daily maximal and minimal temperatures was 47.4°. The screened thermometers rose to 63.7° on the 9th, and fell to 30.5° on the 21st. On this latter date the grass minimum was 21.8°, while ground frost was felt on 16 nights. On the 8th the black bulb *in vacuo* rose to 106.0°. Rain fell on 14 days to the amount of 1.032 inches, the greatest fall in 24 hours being .297 inch on the 2nd. The duration of bright sunshine according to the Campbell-Stokes recorder was 92.7 hours, of which 8.4 hours occurred on the 5th and again on the 6th. The mean daily sunshine was 3.0 hours. The mean temperature of the soil at a depth of 1 foot was 48.7° at 9 a.m.; at a depth of 4 feet, it was 51.9° at 9 a.m. The subsoil temperature at 1 foot decreased from 53.1° on the 4th to 44.0° on the 25th and 26th. At 4 feet it decreased from 54.1° on the 1st to 48.6° on the 31st.

At Cloneevin, Killiney, Co. Dublin, Mr. Robert O'B. Furlong, C.B., returns the rainfall in October at 1.01 inches on 14 days, compared with 2.760 inches on 20 days in 1902, 3.820 inches on 26 days in 1903, only .290 inch on 12 days in 1904, and a twenty years' average (1885-1904) of 2.996 inches on 16.6 days. On the 2nd .27 inch fell. Since January 1, 1905, 22.100 inches of rain have fallen at this station on 146 days.

Mr. T. Bateman reports that the rainfall at The Green, Malahide, Co. Dublin, was 1.092 inches on 14 days, the greatest fall

in 24 hours being .275 inch on the 30th. The mean shade temperature was 45° , the extremes being—highest, 62.5° on the 10th; lowest, 28° on the 21st.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 15 days to the amount of 1.54 inches, compared with 2.40 inches on 21 days in 1901, 3.45 inches on 24 days in 1902, 3.38 inches on 26 days in 1903, and .42 inch on 9 days in 1904. The greatest measurement in 24 hours was .43 inch on the 2nd. The mean temperature in the shade was 47.1° , the range being from 61° on the 9th to 31° on the 21st. The mean temperature of October was 50.0° in 1901, 50.9° in 1902, 50.8° in 1903, and 51.6° in 1904.

Deputy Surgeon-General C. Joynt, F.R.C.P.I., registered 1.332 inches of rain on 16 days at 21 Leeson Park, Dublin, the largest measurement in 24 hours being .458 inch on the 2nd.

Miss Muriel E. O'Sullivan recorded a rainfall of 1.278 inches on 14 days at Whitecross, Stillorgan, Co. Dublin. The heaviest fall in 24 hours was .400 inch on the 2nd.

Mr. R. Cathcart Dobbs, J.P., reports that the rainfall in October at Knockdolian, Greystones, Co. Wicklow, amounted to only .641 inch on 11 days. Of this quantity, .195 inch fell on the 2nd. From January 1st, 1905, up to October 31st, rain fell at Knockdolian on 131 days to the total amount of 22.754 inches. In 1893 the rainfall in the corresponding ten months was 17.801 inches on 133 days; in 1897, 32.730 inches on 171 days; in 1898, 24.177 inches on 140 days; in 1899, 30.000 inches on 150 days; in 1900, 33.311 inches on 155 days; in 1901, 28.030 inches on 135 days; in 1902, 31.811 inches on 140 days, in 1903; 30.965 inches on 181 days; and in 1904, 22.087 inches on 151 days.

Dr. B. H. Steede reports: At the Royal National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was .707 inch on 10 days, compared with 3.175 inches on 13 days in 1897, 4.385 inches on 17 days in 1898, 1.484 inches on 11 days in 1899, 3.551 inches on 14 days in 1900, 3.200 inches on 21 days in 1901, 3.577 inches on 18 days in 1902, 4.155 inches on 26 days in 1903, and .868 inch on 13 days in 1904. The heaviest fall in 24 hours was .160 inch on the 29th. The highest temperature in the screen was 63.2° on the 9th, the lowest was 31.3° on the 21st. At this Normal Climatological Station the rainfall from January 1 to October 31, inclusive, amounted to 24.139 inches on 138 days, compared with 26.479 inches on 139 days in the corresponding ten months of 1898, 27.643 inches on 140 days in 1899, 28.599 inches on 150 days in 1900, 24.953 inches on 142 days in 1901.

29.742 inches on 154 days in 1902, 35.516 inches on 201 days in 1903, and 26.562 inches on 168 days in 1904.

Mr. William Miller states that in the City of Cork there were 9 days with rain during the month—total fall, 0.92 inch, which was 2.38 inches under the average. The greatest day's rain was that of the 28th—0.42 inch. The rainfall of the past ten months was 29.03 inches, which was 0.66 inch short of the average for the same period. The rainy days in 1905 so far have been 151, or 5 below the average.

At the Ordnance Survey Office, Phoenix Park, Dublin, the October rainfall was 1.365 inches on 17 days, compared with .650 inch on 10 days in 1904, and 2.339 inches on 24 days in 1903. The heaviest fall in 24 hours was .390 inch on the 2nd. At the Royal Botanic Gardens, Glasnevin, the rainfall on 16 days was 1.150 inches, the greatest daily fall being .270 inch on the 3rd.

The Rev. Arthur Wilson, M.A., recorded a rainfall of 1.52 inches on 9 days at the Rectory, Dunmanway, Co. Cork. Up to the 25th of the month only .336 inch fell, including .155 inch on the 21st. The heaviest falls in 24 hours were .48 inch on the 28th, .25 inch on the 29th, and .24 inch on the 30th, that is .97 inch on 3 days. Mr. F. Fitzmaurice, of Carbery, recorded 1.64 inches for the month in a self-registering Zero rain gauge.

Dr. J. Byrne Power, F. R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 48.6° , being 3.2° below the average for the month during 18 previous years (1873-83 and 1898-1904), and the lowest mean for October during those 18 years. The extremes were—highest, 62.7° on the 9th; lowest, 34.5° on the 21st. At Bournemouth the mean was 47.7° , the extremes being—highest, 62° on the 9th; lowest, 28° on the 18th and 27th. The mean daily range of temperature was 10.3° ; at Bournemouth it was 14.3° . The mean temperature of the sea at Sandycove bathing-place was 51.1° , being as much as 4° below the average for the month during the previous 7 years. The relative humidity was 78 per cent., being 2 per cent. below the average for October during the previous 4 years. The rainfall was 0.71 inch on 13 days, being nearly 2 inches below the average for the month during 15 previous years (1873-83 and 1901-04); at Bournemouth it amounted to 2.27 inches. The duration of bright sunshine was 121.0 hours, compared with 111.9 hours recorded at the Ordnance Office, Phoenix Park, 117.8 hours at Valentia, 99.3 hours at Birr Castle, 115.6 hours at Southport, and 137.1 hours at Hastings.

PERISCOPE.

INEBRIETY AND THE SO-CALLED CURES.

DR. JAMES STEWART, B.A., F.R.C.P. Edin., Resident Physician of the Dunmurry Home for Inebriate Gentlefolk, discussing this topic in the *Bristol Medico-Chirurgical Journal*, June, 1905, suggests that the following statements, founded on observations extended over many years of clinical work, might with advantage be put before an intelligent inquirer into the value of these so-called "cures" of inebriety:—(1) The nervous system varies considerably in different individuals. In some cases the brain is much more susceptible to the poisonous effects of alcohol than in others. For example, the neurotic will be affected prejudicially by a comparatively small quantity of spirits which might be taken—aye, even double as much—with almost entire impunity by his neighbour of a different type. (2) Alcohol has an especial affinity for the "memory centre" and the "will centre" of the brain. When either or both of these become deranged—but not till then—the case may be pronounced to be one of inebriety. (3) In the inebriate the cells of these centres are physically injured. An organic lesion has been established. Till other cells have been requisitioned, so to speak, to take the place of those that have been deranged, the functions previously exercised through the latter must remain in abeyance. (4) The process is a very slow one—this taking up of new work by a set of cells not previously so employed. It cannot be hurried. Gold will not expedite the process, nor apomorphin, nor any drug with which we are acquainted. The restoration of healthy function has never been known by the writer during an experience of over twenty years at Dunmurry to be accomplished in a single case in less than a twelvemonth. An official document issued by the Home Secretary in 1899 stated that there was a consensus of opinion among medical men that, in order to give a chance of effective operation to even the best designed method of treatment, a considerable period of residence in a "home" was required. The treatment "cannot be successfully carried through under eighteen months to two years even in favourable cases." (5) Hypnotism, the injection of apomorphin or other drug (according to "Dr. Topsy's" or any other method) may arrest the drunkard in his downward course of vice. It will not do anything towards the re-building of injured brain tissue. (6) The

inebriate must for at least twelve months be placed in such surroundings as experience shows are favourable for the carrying out of the work of restoration of the injured brain cells—a work which must not be interrupted, and which cannot go on if alcohol in any quantity, even the smallest, be taken by the patient. The protection of the patient can be secured only in a properly organised “home.” (7) Forty-one per cent. of the cases of both sexes treated at the Dunmurry Home during the last ten years had previously been under the care of “Dr. Topsy” or some other lightning curer of inebriety. In every one of these cases, without exception, the patient said the benefit was only temporary, the duration of the immunity depending on (a) the occupation or surroundings of the patient after the so-called “cure” had been effected, and (b) the condition of the general health. All looked upon the expenditure on the “cure” as waste of both time and money.

THE SOUTH AFRICAN WAR.

MEDALS or clasps for the undermentioned gentlemen, who served as civil surgeons in South Africa, and whose addresses are unknown, await issue at the War Office. Application for these should be made to the Secretary, War Office, 68 Victoria Street, London, S.W.—

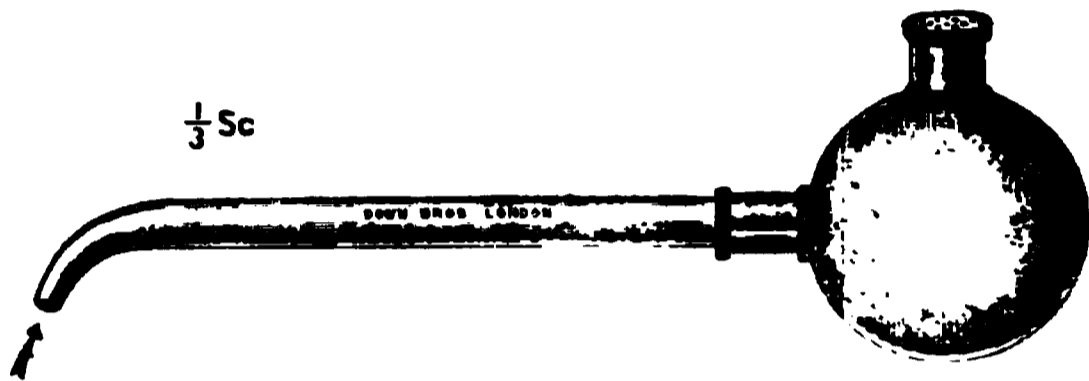
Albertyn, J.	Hart-Jackson, W.	O'Farrell, F. J.
Aldred, A.	Harvey, H.	Parkinson, W. G.
Alexander, K. B.	Harwarden, G. F.	Peters, C. A.
Allport, P.	Hibberden, G. A.	Phillips, N. C.
Bayley, P.	Horne, H. R.	Ralston, F. C.
Bishop, W. O.	Hudson, W.	Riordan, H.
Booth, R. R.	Hunter, C. W.	Robertson, W. R.
Calder, W. J.	Hunter, F. A.	Rowland, F.
Clark, M.	Johnston, T.	Short, W. R.
Clarke, G.	Jones, G. B.	Simon, W.
Clarke, W.	Klein, M.	Simon, E.
Crean, G. G.	Kerr-Bell, T. J. H.	Smith, W. H.
Dunlop, C. D.	Langdon, D. C.	Somerville, W.
Elmes, H.	Leslie, G. W.	Stephen, L. N. G.
Fehrson, J. McCall	Losser, H. A.	Stow, F. E.
Fenton, J.	Lundie, G. F.	Thomas, F. C. M.
Froud, W.	Mantell, H. T.	Thomas, H. S.
Fryer, R. C.	Mate, W. F.	Tucker, J. A.
Galbraith, H. T.	M'Dougall, A. H.	Twigg, E.
Gillanders, I. L. G.	Milne, J. E.	Visser, J.
Gilbert, R. G.	Nangle, J.	Warren, T.
Gillespie, J.	Nixon, E. A.	Wellford, F.
Gould, H.	O'Connor, C. E.	Wilkinson, R. H.
Hangen, T. M.	Ogle, A.	Woodhouse, W. B.

War Office, *November 10th*, 1905.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Mucus Evacuator.

To practitioners who have on their visiting list a considerable number of obstetric cases during the year, the little instrument devised by Dr. J. Spencer Sheill, Assistant-Master of the Coombe Maternity Hospital, Dublin (and of 63 Harcourt Street), and called by him his "mucus evacuator," will prove a boon and



fill a long-felt want. Those in a large practice know how frequently children are born with a considerable amount of mucus in the pharynx and larynx, which must be removed at once; and, indeed, meconium in the pharynx is by no means rare in complicated cases. It is for the ready and complete removal of this that the instrument has been devised, and it will hardly be denied that a means of doing this quickly and safely, without the necessity of the disgusting, not to say risky, method of applying suction by the mouth to a catheter, will be welcomed as a distinct advance in midwifery methods. The instrument has passed the experimental stage, and has been in use for some years in the labour wards of the Coombe Hospital, Dublin. Its simplicity, as can be seen by the illustration, will appeal to most, there being nothing to get out of order. The whole article may be boiled for sterilising purposes without taking the parts asunder. Should an accident cause the breaking of the glass tube, a new one may be fitted in a moment by the user at a cost of a few pence. If preferred, a metal tube may be substituted for the glass one, the instrument then becoming useful to the anæsthetist also for withdrawing mucus from the pharynx during the administration of ether much more effectively and conveniently than by the old method. The instrument is made by Messrs. Down Bros., Ltd., London, and by Messrs. Smith & Sheppard, of St. Stephen's Green, Dublin.—*The Medical Annual*, 1905.

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- Wright, Professor Adam H., text-book of obstetrics, *Rev.*, 377.
- X-rays in ringworm of the scalp, Dr. W. C. Oram on, 89.
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FIRE !

WE regret to learn from Messrs. John Wright & Co., the Bristol medical publishers and printers, that by the fire arising in a neighbouring warehouse on November 4, 1905, their offices, factory, and stock were entirely destroyed. There are, however, a few copies of most of their publications at their London agents, Messrs. Simpkin & Co., Ltd. Those can be supplied so long as any remain. In the meantime, a re-start has been made in a temporary factory, and most of the volumes are being reprinted by themselves and by other firms throughout the country. In a few weeks they hope to re-issue the most urgent volumes, and confidently trust to the forbearance of their friends for any temporary inconvenience thus unavoidably caused.

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